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DEPARTMENT OF DEFENCE

DEFENCE SCIENCE AND TECHNOLOGY ORGANISATION

AERONAUTICAL RESEARCH LABORATORY

MELBOURNE, VICTORIA

Flight Mechanics Technical Memorandum 443

SURFACE PRESSURE MEASUREMENTS ON THE WING OF A WIND TUNNEL MODEL DURING STEADY ROTATION

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SUMMARY

Wind tunnel measurements were conducted to determine the nature of the pressure distribution over the wing of a model of a basic training aircraft for a range of angles of attack and rotation rates representative of aircraft spinning conditions. The tests were carried out as part of a collaborative programme organised through The Technical Cooperation Programme (TTCP) and were conducted in the Spin Research Facility at the NASA Langley Research Center. Software for displaying the surface pressure distributions was developed at the Aeronautical Research Laboratory (ARL). This report presents pressure coefficient data obtained during the programme, in both numerical and graphical form.

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Victoria Australia

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NOTATION

b	wing span ft
c	mean aerodynamic chord, ft
C_A	axial force coefficient
C_l	rolling moment coefficient
C_m	pitching moment coefficient
C_n	yawing-moment coefficient
C_N	normal force coefficient
C_p	pressure coefficient
q	free-stream dynamic pressure, lb/ft^2
Re.	Reynolds number
S	wing area, ft^2
V	free-stream velocity, ft/sec
α	Aircraft Angle of Attack with spin axis
β	Aircraft sideslip angle
Ω	angular velocity about spin axis, rad/sec
$\Omega b/2V$	spin coefficient, positive for clockwise spin

Abbreviations:

c.g.	centre of gravity
ft	feet
lb	pound

1.0 INTRODUCTION

An investigation has been conducted in the NASA Langley Spin Research Facility to measure the pressures on the surface of the horizontal tail, vertical tail, aft fuselage and wing of a model of a basic training aircraft during steady rotation. The tests were made to determine the nature of the aerodynamic load distribution on the model during conditions typical of those of a spinning aircraft.

For a number of years rotary balance force and moment tests have been carried out to determine net aerodynamic loads on wind-tunnel models in steady spinning conditions. The technique provides information on the effects of controls and on the influence of various model components, on total forces and moments. This information can be used to give additional insight into the motion data derived from dynamic model techniques and full scale tests. The measurement of surface pressure distributions provides a further level of detailed information on aerodynamic loading and can help to resolve the complex interference effects which have been revealed in component force tests.

The pressure measurement programme was a joint effort between NASA Langley Research Center, the Aeronautical Research Laboratory (ARL) and Bihrle Applied Research (BAR), who conducted the spin tunnel testing programme. The ARL participation was sponsored by The Technical Cooperation Programme (TTCP).

Detailed analysis of various aspects of the results has previously been reported in References 1,2 and 4. This report documents the wing pressure distribution results in both tabular and graphical form.

2.0 MODEL

A 1/7th scale balsa plywood and fibreglass model of a basic training aircraft was used for the pressure testing programme. A photograph of the model is shown in figure 1 mounted on the rotary balance rig. The dimensions of the model are presented in table 1 and a three-view diagram is shown in figure 2.

The model had previously been used to gather force measurements to support the design and development of the aircraft spin characteristics. During the development programme a comprehensive data base of force and moment information was acquired. As part of the collaborative research programme the model was modified at ARL to enable surface pressures to be measured on the horizontal and vertical tails as well as the aft fuselage. Pressure ports were later installed by BAR in the wing at the locations shown in figure 3. A total of 96 ports were used on the wing, half distributed on the starboard wing upper surface, and half on the port wing lower surface. The complete distributions for each wing are obtained by combining the results from tests at equivalent positive and negative rotation rates. In this procedure the assumption is made that the flow conditions on the model are symmetrical. Although it is known that this is not strictly true, due to tunnel flow and model asymmetries, it enables a much larger range of conditions to be investigated in the tunnel test time available. The pressure ports were constructed from 0.060 inch metal tubing and were connected to a scanivalve by 0.060 inch plastic tubing. The scanivalve was located within the model's forward fuselage and was connected to a pressure transducer mounted on the rig by 0.060 inch plastic tubing.

3.0 TEST EQUIPMENT AND ACCURACY

A rotary balance apparatus was used to subject the model to steady-state rotational aerodynamic flow. Normally, tests are conducted under these conditions to measure six-component aerodynamic force and moment data. In this study, however, the rotary balance was used to rotate the model while pressure data were measured at ports on the tails, aft fuselage and wings. A schematic of the data acquisition system used is shown in figure 4.

Because of the very low pressures to be measured (less than 1.0 psf), a differential, as opposed to an absolute, pressure transducer was used for these tests to ensure a high degree of sensitivity and resolution. For the differential transducer it is necessary to supply a known reference pressure. For these tests, the reference used was the pressure measured inside the model with the tunnel air flowing past it at the test velocity. The reference side of the transducer was connected to this source through eight feet of plastic tubing coiled inside the model. Measurements for all ports were taken using this reference pressure, and then corrected to the free-stream static pressure. To reference the port pressures to the free-stream static pressure, the difference between the free-stream static pressure and the pressure inside the model was measured at each angle of attack tested. These values were then added to the data to reference it to the free-stream static pressure. These pressure differences were measured without the model rotating. A check measurement was made with the model slowly spinning at $\Omega b/2V = 0.1$ to determine any further variation between the two pressures due to model rotation. None was noted, and it was assumed that little change to the reference pressure inside the model occurred with rotation.

The number of pressure readings needed to get repeatable results was determined from preliminary tests conducted using between 20 and 80 readings of a port and averaging the results for the final pressure. It was established that 40 readings gave an acceptable average for the measured pressure at each port. The data sampling scheme adopted sampled one pressure port every 45 degrees of rotation until all 40 readings were gathered. This required five revolutions to complete each pressure port with the 40 readings averaged to give the final pressure.

Tests conducted in the tunnel to determine accuracy, sensitivity, and repeatability of the data acquisition system showed that all values were accurate to within 5% of dynamic pressure. For these tests, with dynamic pressure, q, equal to 0.71 lb/ft^2, an accuracy of 0.036 lb/ft^2 was achieved.

4.0 TEST PROCEDURE

Pressure data were measured one port at a time due to instrument limitations. At each rotation rate, a total of 40 pressure readings were taken for one port and then averaged and processed by the computer. The scanivalve was then stepped to the next port and another 40 readings made and averaged. This procedure was continued until all ports had been sampled at each angle of attack and configuration. The results of the average pressure was stored on magnetic disc for later analysis.

The test configurations chosen for the study have been tabulated for the wing series of tests in table 2.

5.0 TEST CONDITIONS

The test were conducted in the spin tunnel at a velocity of 25 ft/sec. This corresponds to a dynamic pressure of 0.71 lb/ft^2 and a Reynolds number of 140,000 based on the model mean aerodynamic chord. All configurations were tested with the spin axis passing through the full-scale C.G. location of 25% chord.

Pressure measurements were recorded for a number of configurations as shown in table 2. The testing programme data was obtained for spin rates $\Omega b/2V$ of 0, 0.05, 0.1, 0.2, 0.3, 0.4 and 0.5 with the model rotating both clockwise (Pilots' Right) and counter-clockwise directions.

The angle of attack and sideslip ranges were selected to provide information about the spin characteristics during spin entry, steady spin, and spin recovery. Measurements were carried out at angles of attack of 5, 15, 20, 30, 40, 50 and 80 degrees for a slide slip angle of 0 degrees, and at 5 and 50 degrees for side slip angles of -10 & 10 degrees. Data collected for angles of attack of 15, 30 and 40 degrees were incomplete and are not presented in this report.

6.0 PRESENTATION OF RESULTS

The results from the rotary balance pressure measurement tests are presented in tabular form as well as graphically. The graphical representation has been created from a program developed at ARL, which displays the pressure distributions at different stations on a wire frame model of the basic training aircraft.

The tables of results give measurements in terms of pressure coefficient Cp, for all ports and configurations tested, at all spin rates. Tables 3-10 present the pressure coefficients for the wing.

A recurring problem in planning pressure measurement tests is the need to obtain adequate definition of the profile through areas of rapidly changing pressure, while maintaining widespread coverage of the surface. The port spacings chosen for the wing are shown in figures 3. For the region of rapidly changing pressure at the leading edge of the wing a simple theoretical prediction of the pressure distribution has been calculated and matched to the measured data to augment the plotted results.

The graphical presentation of surface pressures shows the magnitude of the pressure coefficient plotted outwards, normal to the chord line of the wing while shading is used to differentiate the sign of the pressure coefficient. To construct the pressure plots, the pressure data from the starboard wing upper surface and the port wing lower surface were combined as shown in figure 6. Data for the lower starboard surface and the upper port surface were obtained from the measurements with negative spin rate.

Two aspects of the plotted data should be noted. Firstly, the total head at locations along the wing span can exceed the free-stream value due to model rotation. Therefore, a

stagnation pressure coefficient slightly greater than unity can occur. Secondly, depending upon the location of the stagnation point, large suctions will be present on both the upper and lower surface at the nose. These features are unlikely to be revealed in the experimental results because of the lack of test points around the nose. However, the pressure coefficients calculated from the theoretical model will show the features noted above and these may appear as spikes in the small scale oblique plots. Details of the theoretical model and the validity of using this procedure will be discussed in the following section.

6.1 THEORETICAL PREDICTION OF LEADING EDGE PRESSURES

A theoretical estimate of the pressure distribution around the leading edge of each spanwise section of the wing has been calculated using a conformal transformation of the potential flow around a circular cylinder. The prime purpose of augmenting the distributions with a theoretical calculation was to obtain a better estimate of the normal and axial force coefficients in the region of rapidly varying pressure coefficient. The force coefficients obtained from an integration of the pressure distribution have been compared with force balance measurements and a theoretical model in reference 4.

The general form of the transformation is given in reference 3. The particular form used for the flow around the NACA 23015 aerofoil is :

$$z' = (z-1)^m(z+a)^n(z+b)^{1-m-n}$$

where

z = complex variable in original plane
z' = complex variable in the transformed plane
m = real constant defining trailing edge angle
n = real constant
a = complex constant
b = complex constant

The five constants contained in n, a & b were determined using least squares regression to minimise the difference between the transformation z' and the coordinated specified for the NACA 23015 aerofoil.

The transformation is used to define the pressure distribution for the first 2.5% of the chord. For each spanwise section the distribution is calculated for an angle of attack which gives a match with the measured pressure coefficient at 5% chord on the suction side. This approach is used for attached flow cases and also for cases where the wing is stalled. An evaluation of the accuracy of the transformation has not been published. However, for the present application this approach provides a satisfactory method of including the stagnation point and the rapidly changing pressure field over the aerofoil nose section. The nose distribution is added to the pressure distribution display as shown in the magnified view in figure 5 and is also used in summation of total aerodynamic forces produced by the wing.

7.0 DISCUSSION OF RESULTS

Knowledge of the wing aerodynamic characteristics under steady rotation can provide important information on aircraft spin entry characteristics and also on the wing contribution to the steady spin. Because of the low test Reynolds numbers available in the spin tunnel, significant differences can exist in the lift and drag of conventional thick wings at angles of attack close to the stall compared with the full-scale flight values. Providing due consideration is given to the sensitivity of the flow at these low Reynolds numbers, comparisons can be made with rotary balance force data, and with dynamic spin model results from the spin tunnel at similar Reynolds numbers. However, particular care has to be taken in extrapolating the results in the stall spin-entry range of angles of attack to full scale flight conditions. At higher angles of attack where the flow becomes fully separated the effect of Reynolds number would be expected to be small.

7.1 RESULTS AT LOW ANGLES OF ATTACK

The low angle of attack results are of importance since spin entry can be initiated either deliberately or inadvertently through aircraft rotation in roll or yaw when the aircraft is close to the stall. Figure 7 summarises the progressive changes in wing pressure distribution as rotation rate ($\Omega b/2V$) is increased from 0.0 to 0.5. The variation in load distribution agrees in general terms with the behaviour suggested by measurements made in the past on static models. At $\Omega b/2v = 0.3$ and higher, the starboard wing is fully stalled and has almost uniform suction over the upper surface. The port wing experiences negative flow incidence angles and hence negative lift which increases in extent as spin rate increases. The stagnation point moves accordingly from the lower to the upper surface.

Figure 8 summarises the progressive changes in wing pressure distribution for an angle of attack of 20 degs. as rotation rate ($\Omega b/2V$) is increased from 0.0 to 0.5. Such conditions would occur during the spin entry and spin recovery phases. Time dependent effects may also be important during these phases but are not covered by the present technique. At low rotation rates the upper surfaces are fully stalled and exhibit uniform pressure loading while the lower surface distribution exhibits both positive and negative loading. This is in contrast with the distributions at 50 degrees angle of attack where the lower surfaces have predominantly positive loading, which is evident in figure 9. As rotation rate increases with an angle of attack of 20 deg., attached flow is re-established on the upgoing wing.

7.2 RESULTS AT HIGH ANGLES OF ATTACK

Rotary balance force tests carried out previously on this model were used to predicted a spin mode with neutral controls at 50 degs. angle of attack and spin rate of $\Omega b/2V = 0.4$. The pressure measurements at these conditions provide information on the wing contribution to the steady spin. Figure 9 summarise the progressive changes in wing pressure distribution for an angle of attack of 50 degs. as rotation rate ($\Omega b/2V$) is increased from 0.0 to 0.5. For all these cases, both the down-going and up-going wings remain fully stalled. On the upper surfaces the pressure distributions are nearly constant in both the chordwise and spanwise directions. However, the negative pressures on the upper surface of the starboard wing are consistently smaller than those on the upper surface of the port wing. This difference exists even at the inboard stations where the

angles of attack due to rotation rate differ only by a few degrees. The cause of this difference which is consistent with the measured force data has not been identified.

Figure 10 shows the wing pressure distributions for an angle of attack of 80 degrees. These conditions would be experienced during a flat spin where the non-dimensional spin rate ($\Omega b/2V$) could be as high as 0.5. The pressure distributions are very similar at all rotation rates indicating that rotation rate does not alter the flow significantly at the very high angles of attack.

7.3 EFFECT OF SIDESLIP ANGLE

The sideslip angle in a steady spin is usually small (less than 10 degrees) but plays a major roll in determining spin equilibrium conditions, primarily through the change in the wing rolling moment contribution. Little is known about the effect of sideslip on the aerodynamic loading of a stalled, rotating wing. Two important effects to be expected are a modification to the location and nature of the stall characteristics, and modifications to the wing body junction flow. Unfortunately in the present experiment the two inboard rows of pressures were not acquired during the sideslip tests and so the junction effects cannot be assessed.

Figure 11 shows the wing pressure distributions for an angle of attack of 5 degrees and an angle of sideslip of 10 degrees for both positive and negative rotation rates. The most significant effect of sideslip can be seen in the comparison of the pressure distributions for non-dimensional spin rates of plus and minus 0.3. For a value of $\Omega b/2V = -0.3$, the port wing is experiencing a reduced angle of attack and the flow has remained attached. For the opposite rotation of $\Omega b/2V = +0.3$ the starboard wing experiences a similar reduction in angle of attack, but the rotation, combined with the sideslip to starboard, has caused the wing to stall. For this case the positive sideslip with negative spin rate could lead to propelling wing rolling moments, while positive sidelip and positive spin rate would provide damping wing rolling moments. This behaviour is consistent with the force measurements made previously on the same model. Since this effect of sideslip is to alter the location of stall on the wing, it can result in large changes in rolling moment, at specific combinations of angle of attack, rotation rate and sideslip angle.

The effect of sideslip angle on the wing pressure distribution at 50 degrees angle of attack is shown in Figure 12 for a range of rotation rates. In contrast to the 5 degree angle of attack case, the wing is fully stalled at all rotation rates. A comparison of the cases for positive and negative non-dimensional rotation rate of $\Omega b/2V = 0.5$, shows that the pressure distributions are almost mirror images, indicating that the effect of sideslip on wing lift, and hence rolling moment, at large angles of attack is small. Force balance measurements indicate that the effect of sideslip on the total rolling moment at large angles of attack is considerable. Therefore larger rolling moment contributions must be generated on other parts of the aircraft such as the wing-body junction or tail at large angles of attack.

8.0 CONCLUSION

This document presents surface pressure distributions measured on the wing of a model of a basic training aircraft during steady rotations typical of aircraft spinning conditions. The data are presented both in tabular form and graphical form for a range of angle of attack, spin rate, and sideslip angle. The graphical presentation has been augmented in the region of the aerofoil nose with data from a theoretical estimate of pressure distribution. The data illustrates the variation in aerodynamic load distribution as wing stall is experienced due to wing rotation and show the aerodynamic loading that exists at large angles of attack typical of steady spin conditions. The significant effect of sideslip angle on aerodynamic loading at angles of attack near the stall is clearly demonstrated. Further testing at other angles of attack would add considerably to current knowledge on spin aerodynamics.

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2. Bowman, J.S.Jnr., Hultberg,R.S., and Martin, C.A., "Measurements of Pressures on the Tail and Aft Fuselage of an Airplane Model During Rotary Motions at Spin Attitudes." NASA Technical Paper 2939. Nov. 1989.

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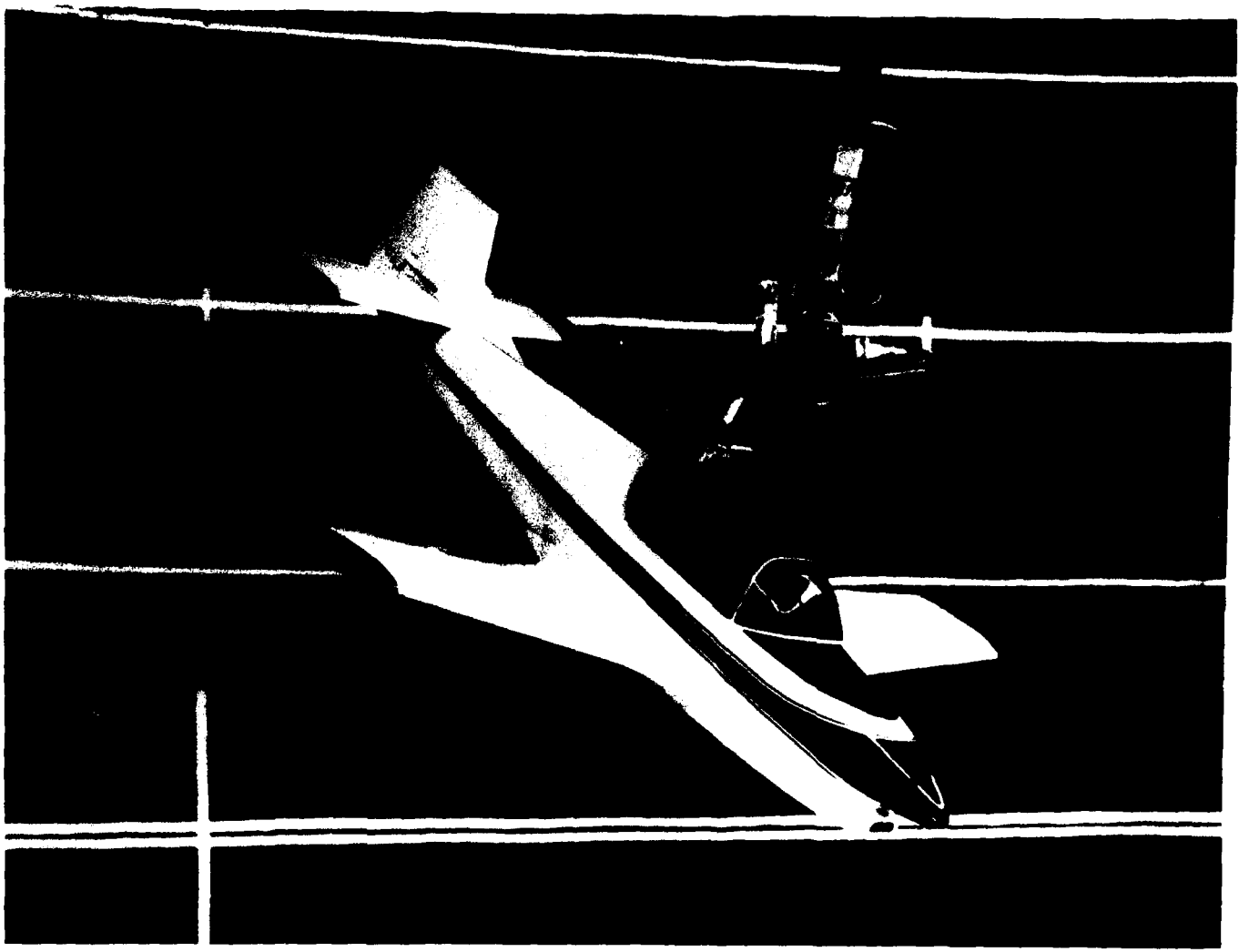
4. Martin,C.A., Hultberg,R.S., Bowman,J.S.Jnr., Drobik,J.S and Gage, P.J. "Measurements of Pressures on the Wing of an Aircraft Model During Steady Rotations". AIAA Paper No.90-28423-CP AIAA Atmospheric Flight Mechanics Conference, Aug. 1990.



Photograph of the model

Figure 1. 1/7-scale model of the Australian airplane used in the pressure measurements.

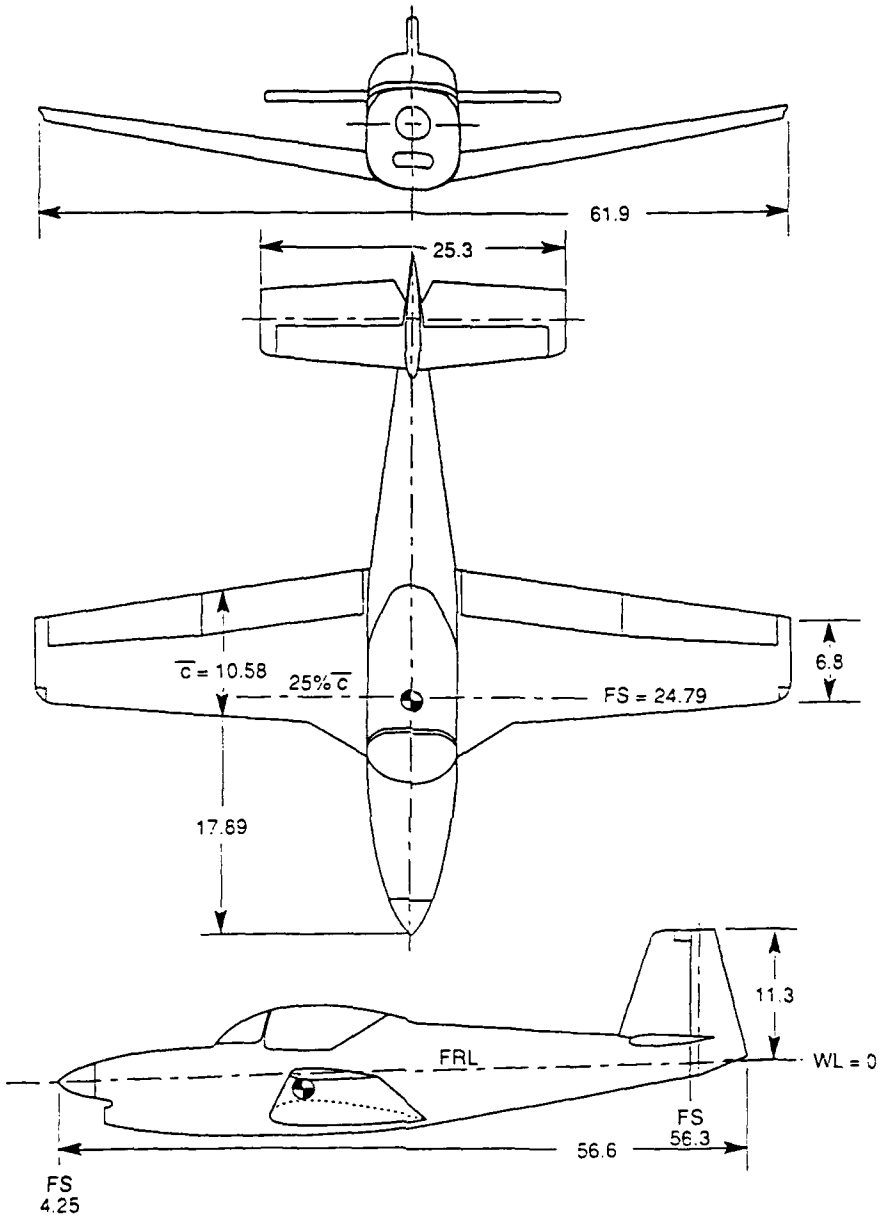


Figure 2 : Three-view drawing of the model.
Dimensions are in inches (model scale).

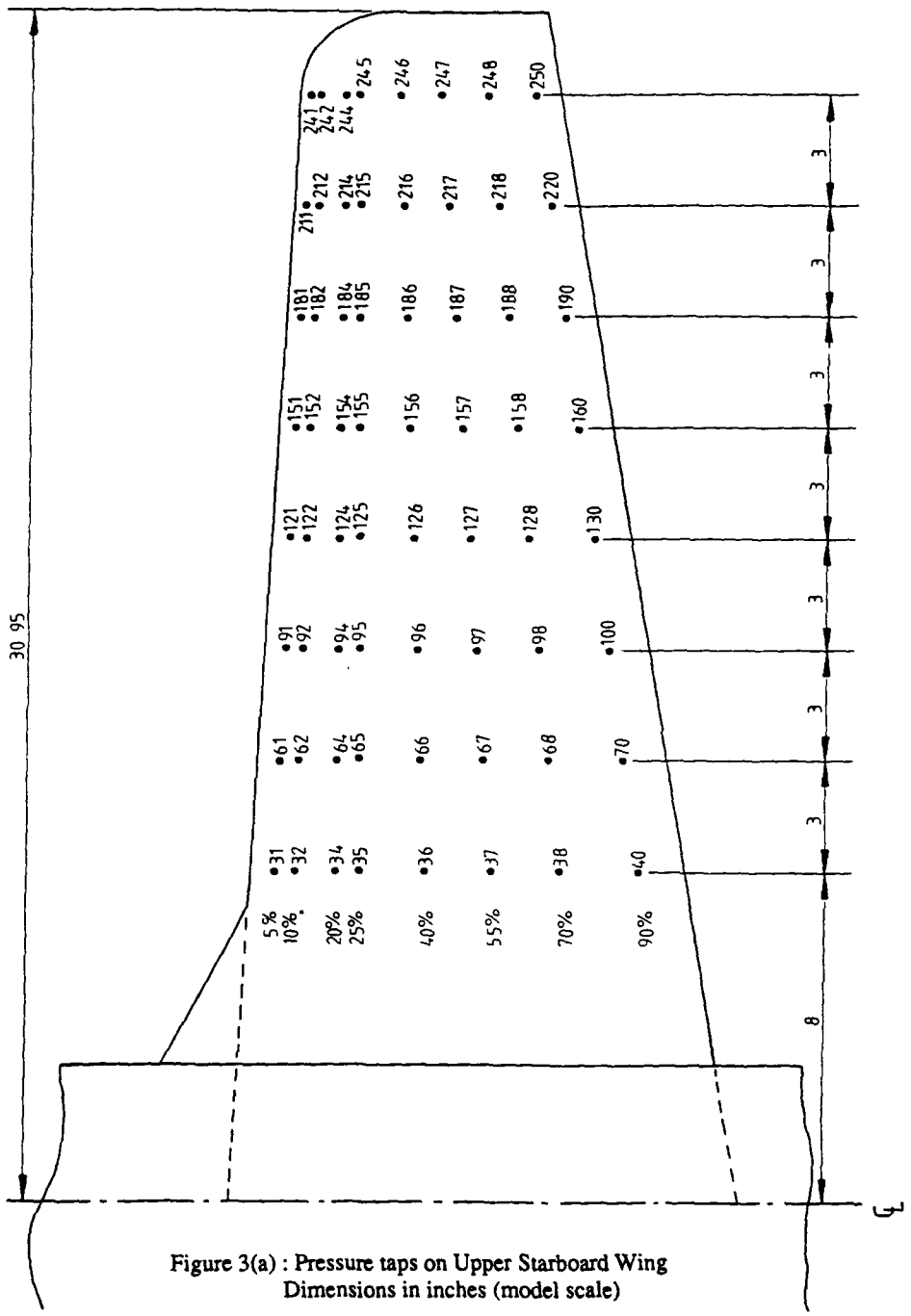
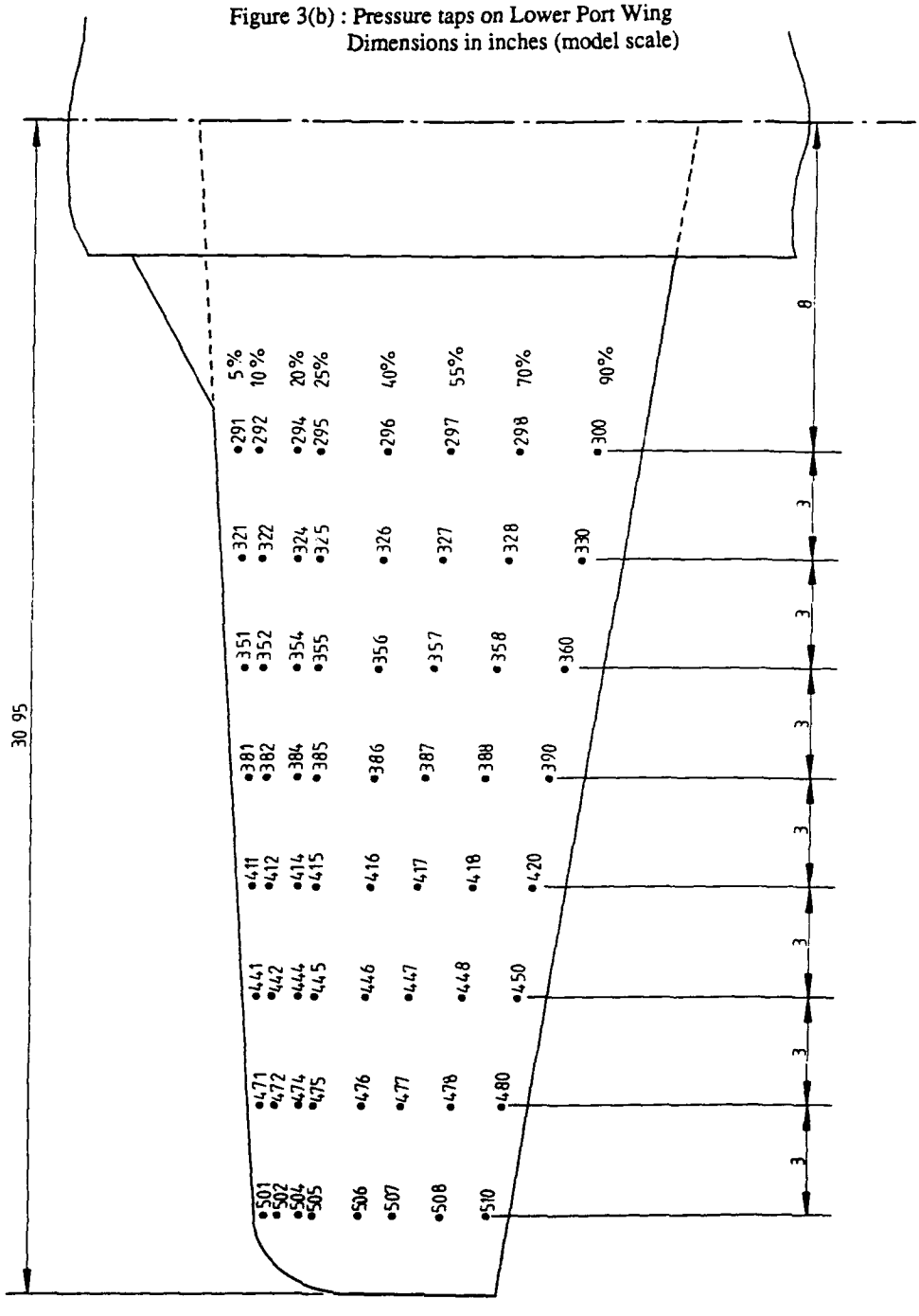


Figure 3(a) : Pressure taps on Upper Starboard Wing
Dimensions in inches (model scale)

Figure 3(b) : Pressure taps on Lower Port Wing
Dimensions in inches (model scale)



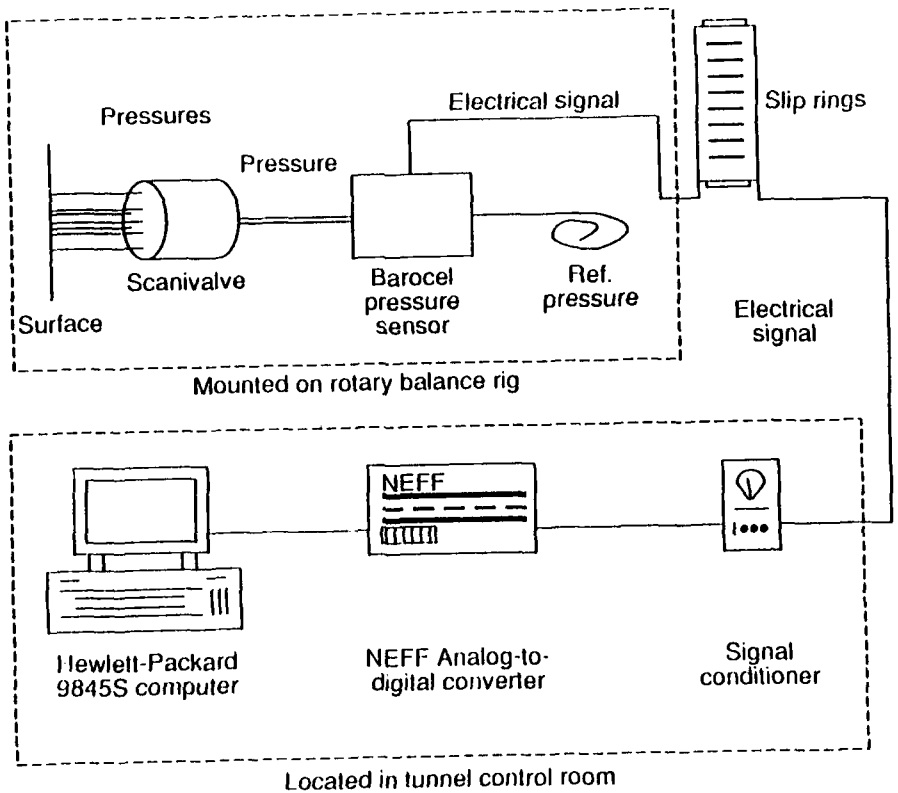
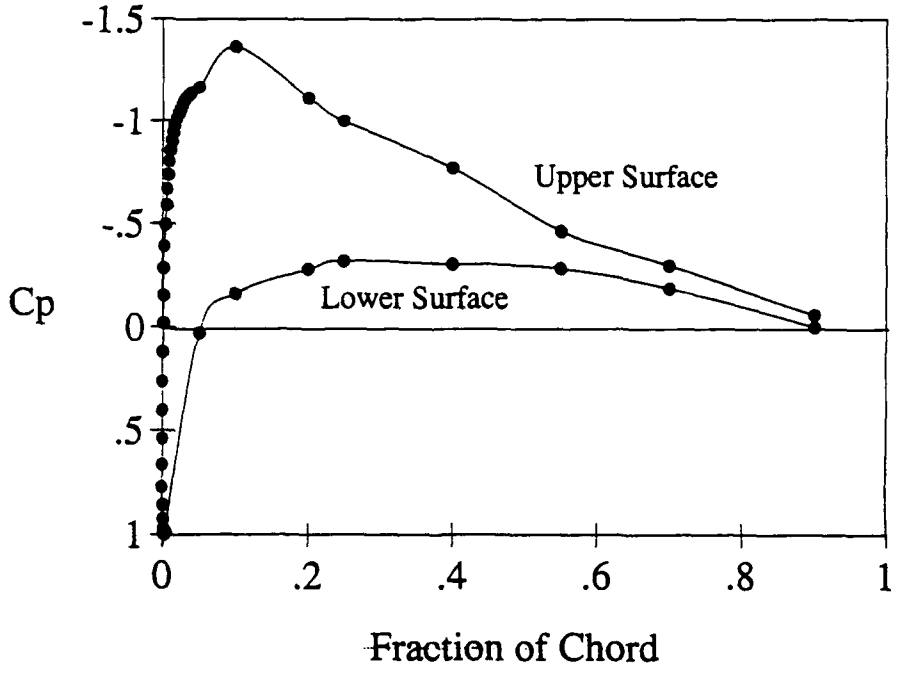


Figure 4 : Diagram of data acquisition system used to measure surface pressure on model.

Figure 5 : Aerofoil Nose Pressure Distribution
(Theoretical Nose + Experimental Data)



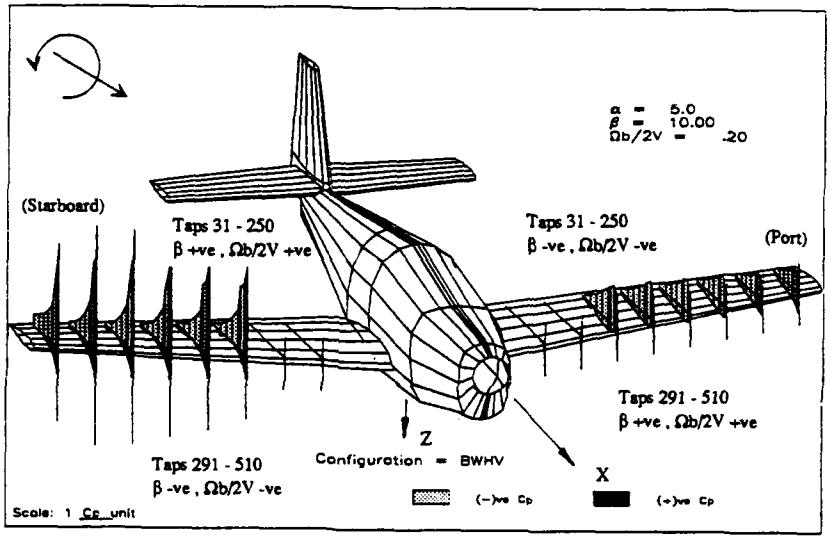


Figure 6 : Key to presentation of Wing Surface Pressures.

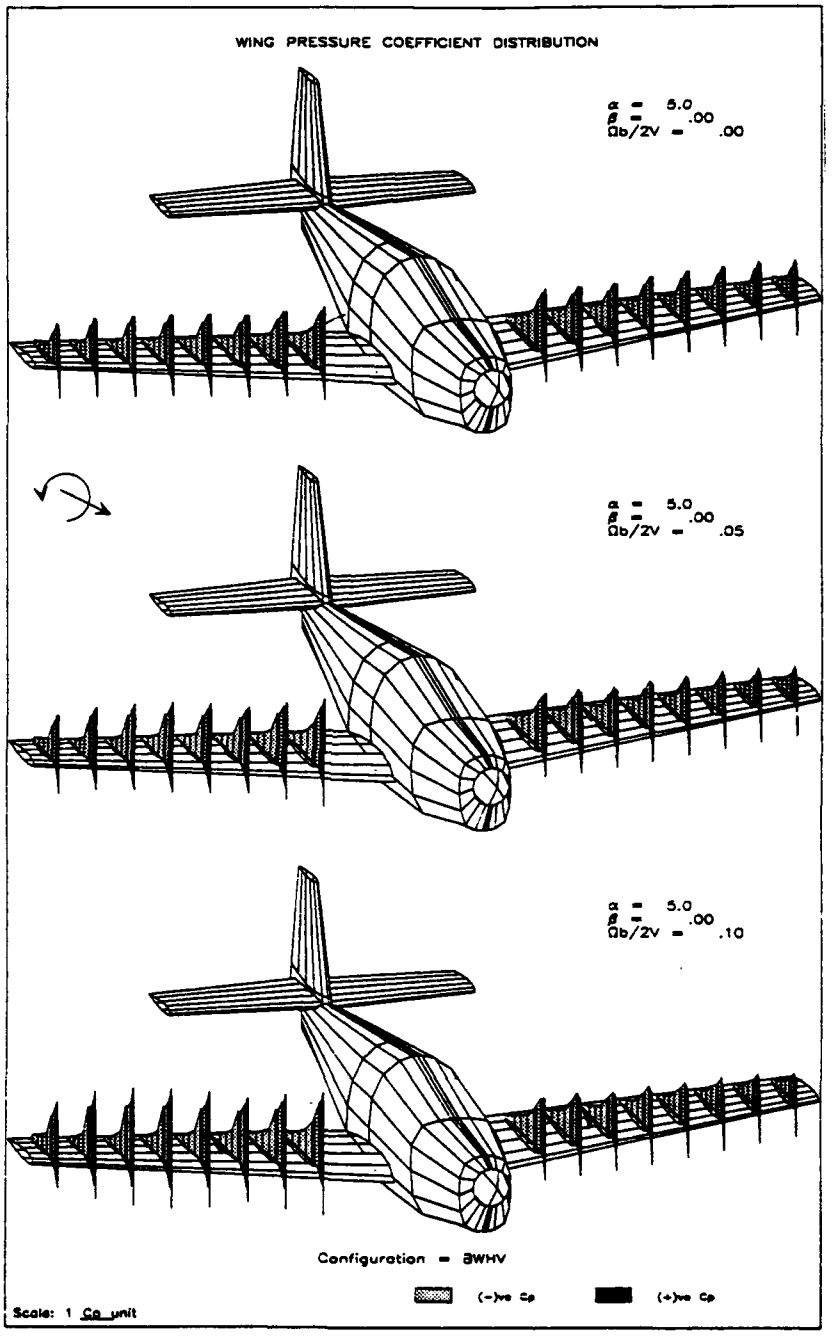


Figure 7 : Wing Pressure Distributions
$\alpha = 5$, $\beta = 0$, $\Omega b/2V = .0 \rightarrow .5$

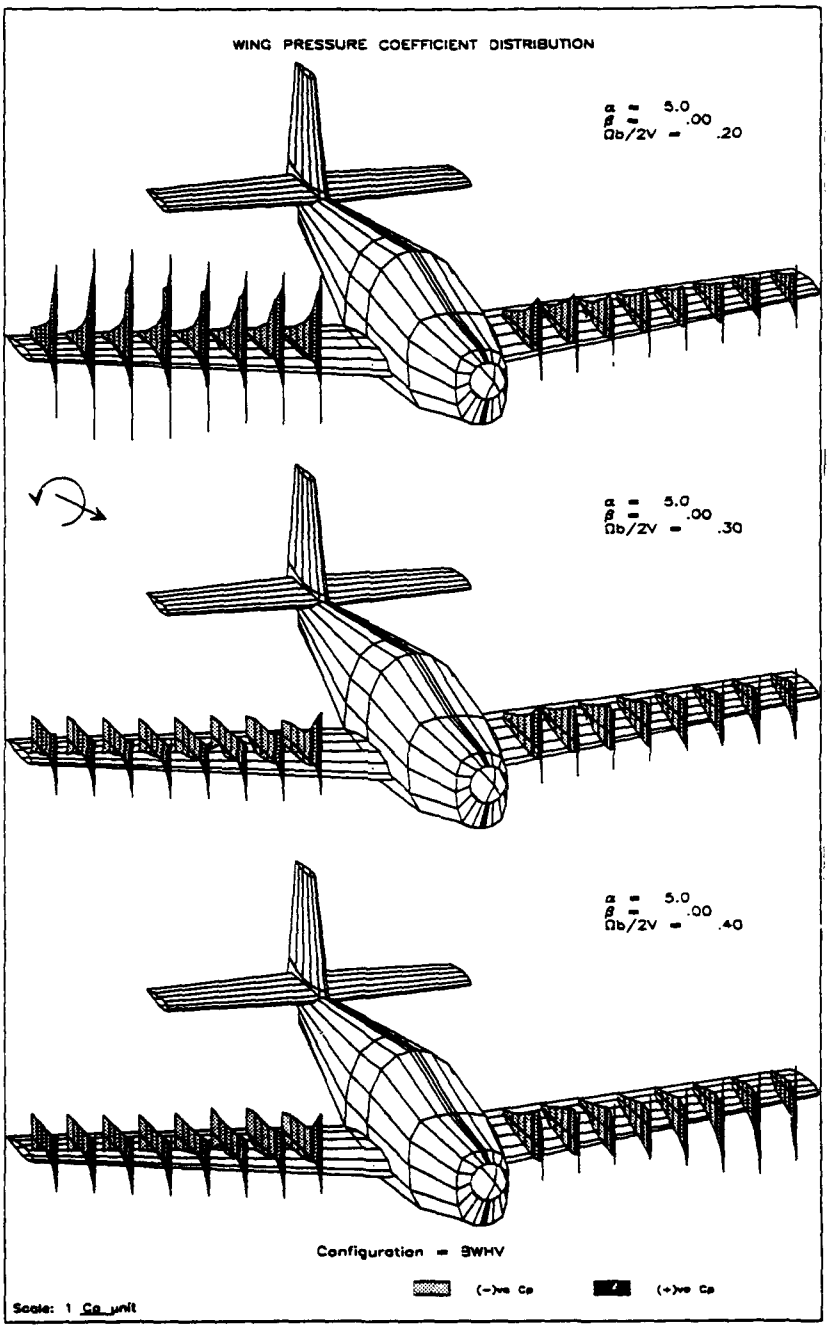


Figure 7 : Wing Pressure Distributions
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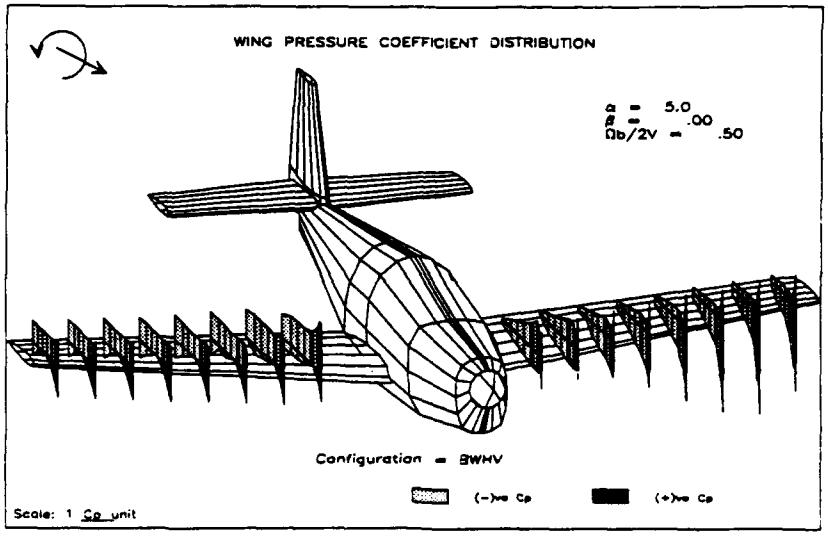

Figure 7 : Wing Pressure Distributions
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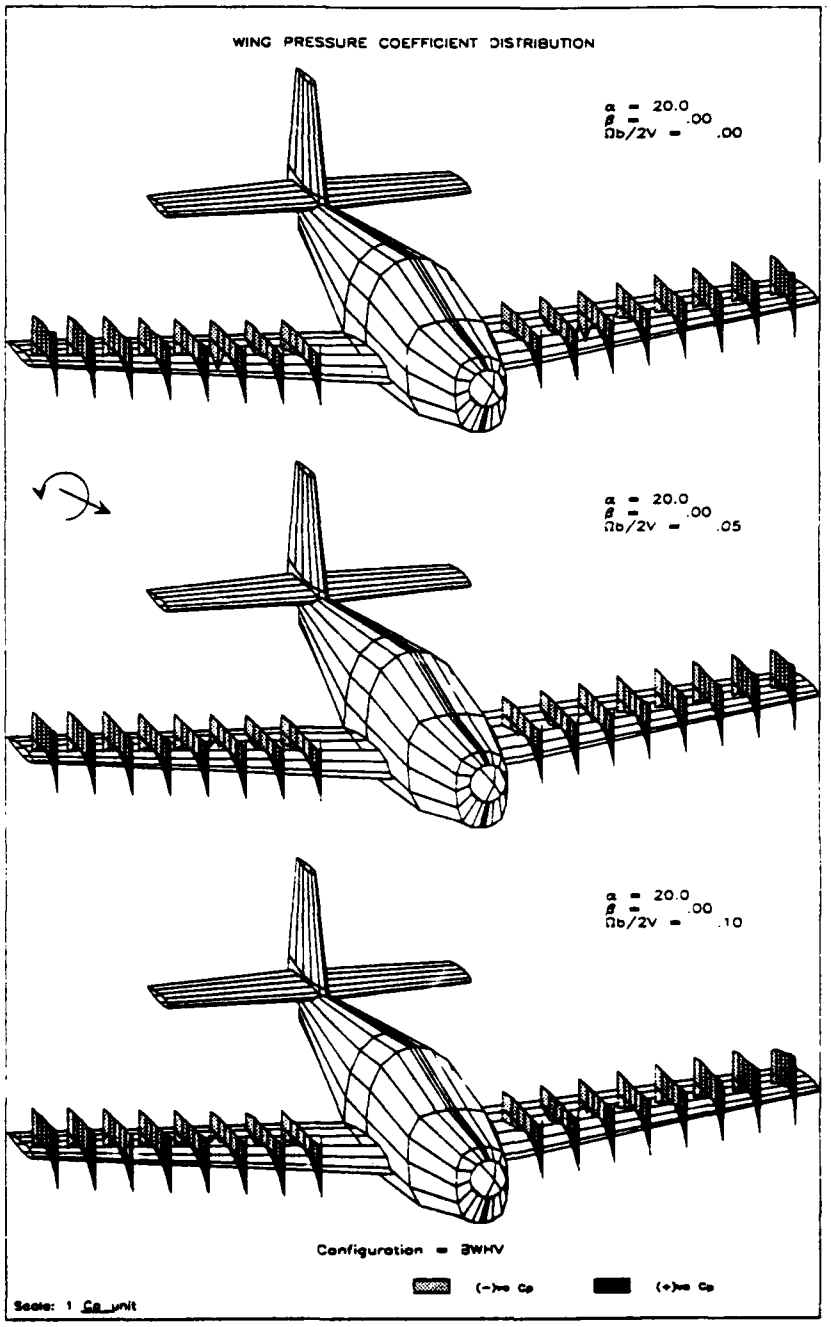

Figure 8 : Wing Pressure Distributions
$\alpha = 20$, $\beta = 0$, $\Omega b/2V = .0 \rightarrow .5$

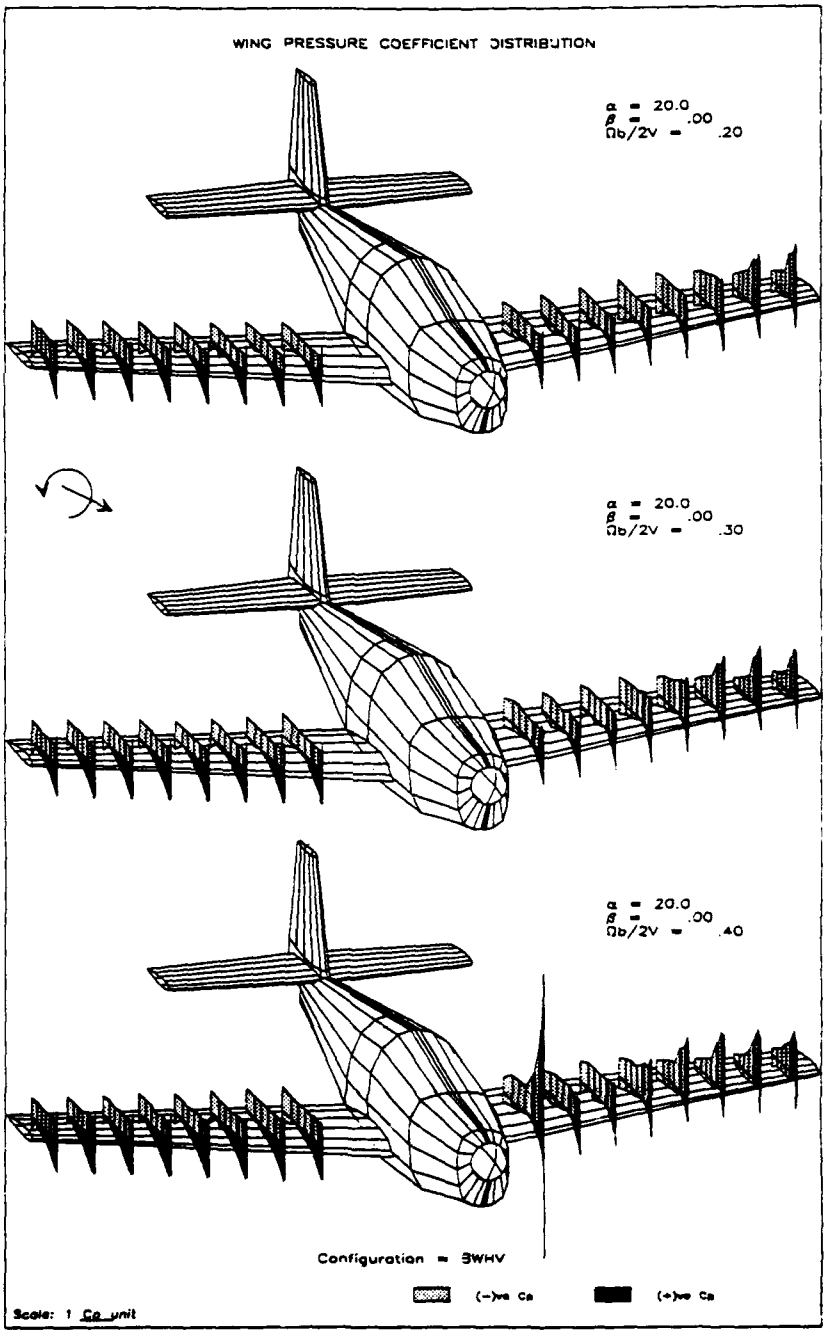

Figure 8 : Wing Pressure Distributions
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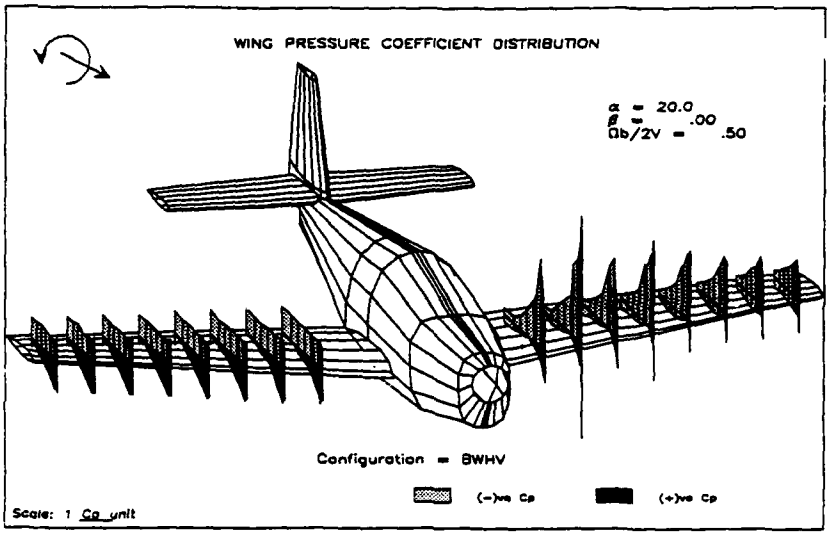

Figure 8 : Wing Pressure Distributions
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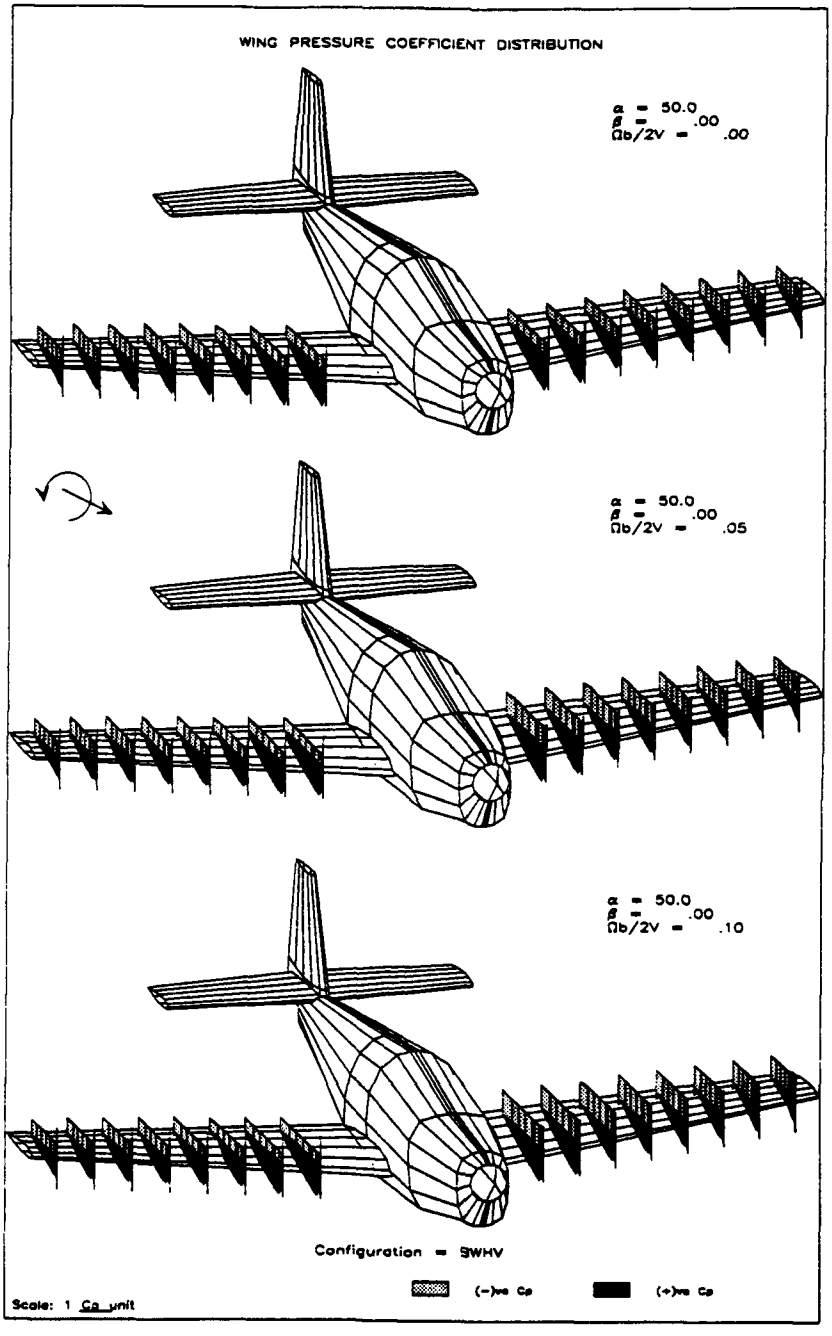

Figure 9 : Wing Pressure Distributions
$\alpha = 50$, $\beta = 0$, $\Omega b/2V = .0 \rightarrow .5$

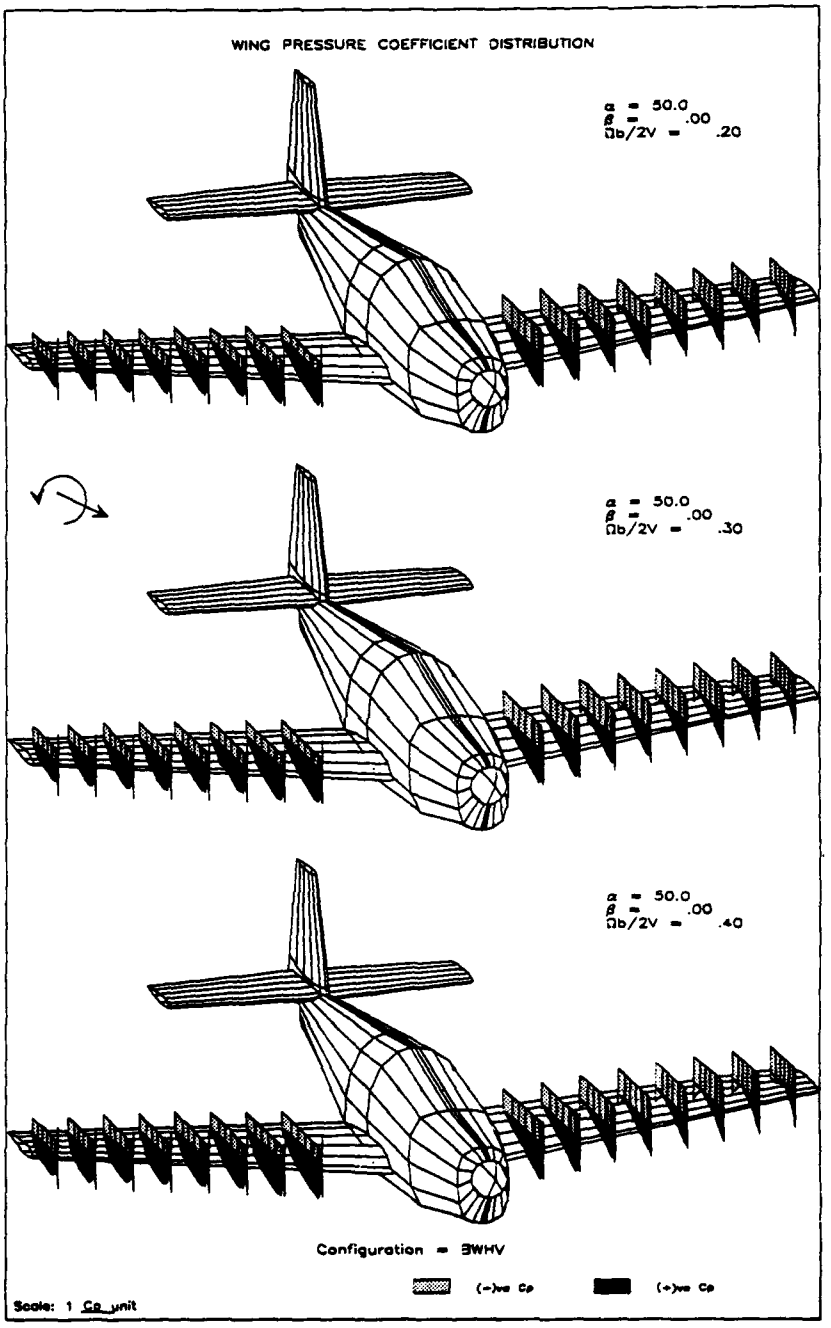

Figure 9 : Wing Pressure Distributions
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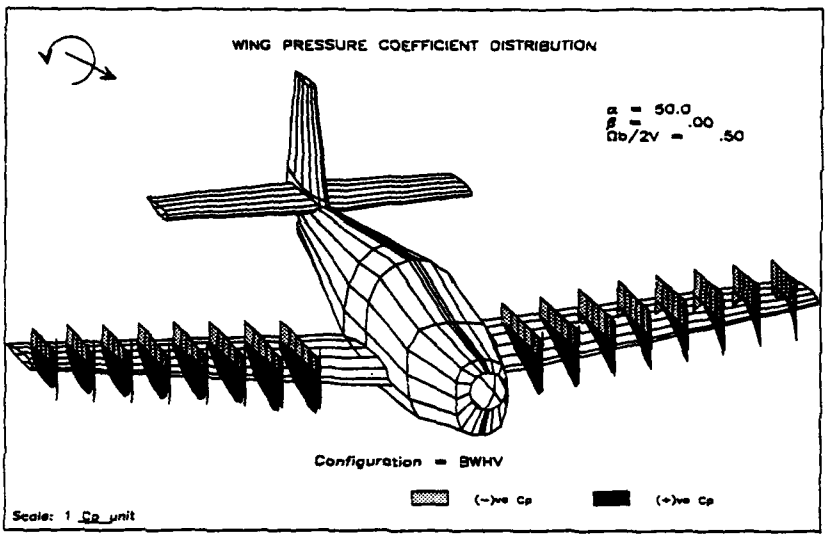

Figure 9 : Wing Pressure Distributions
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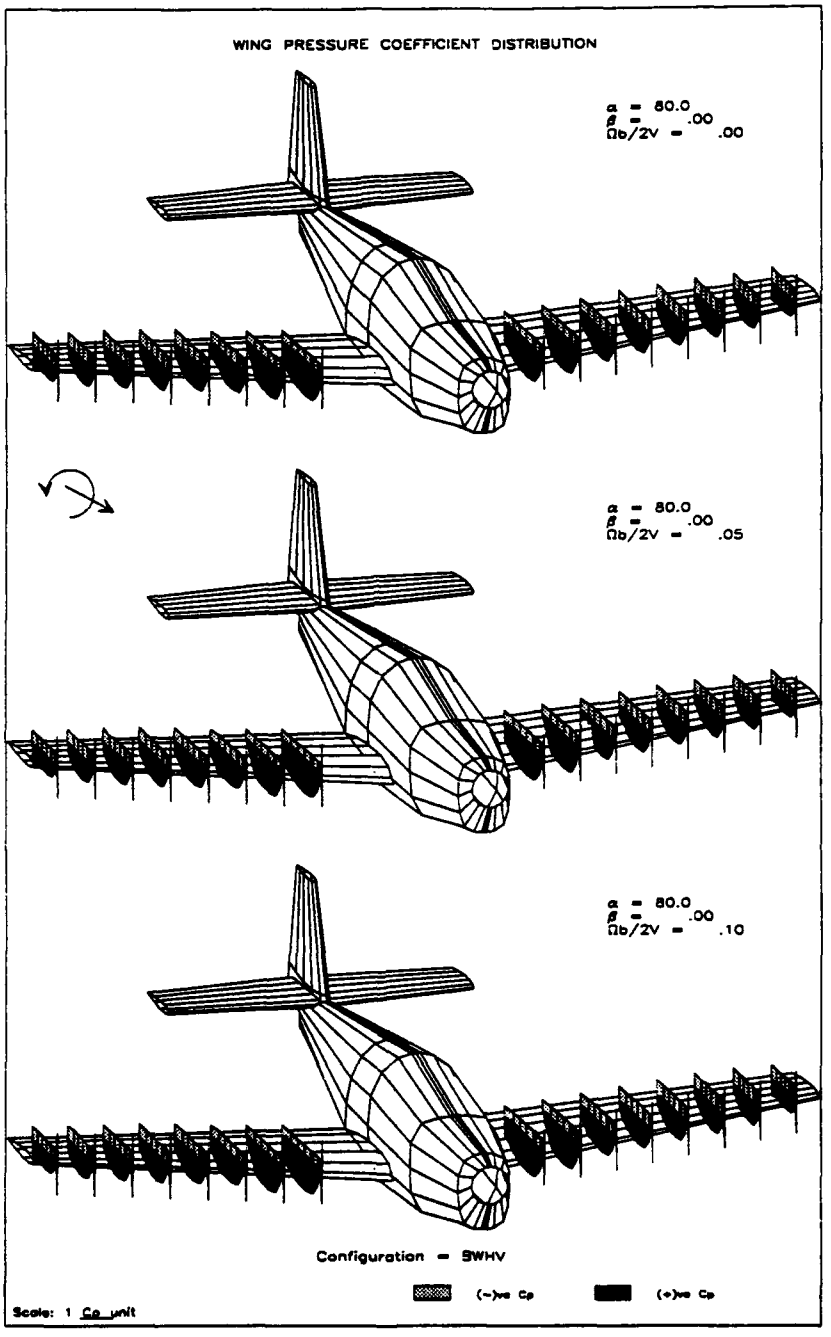
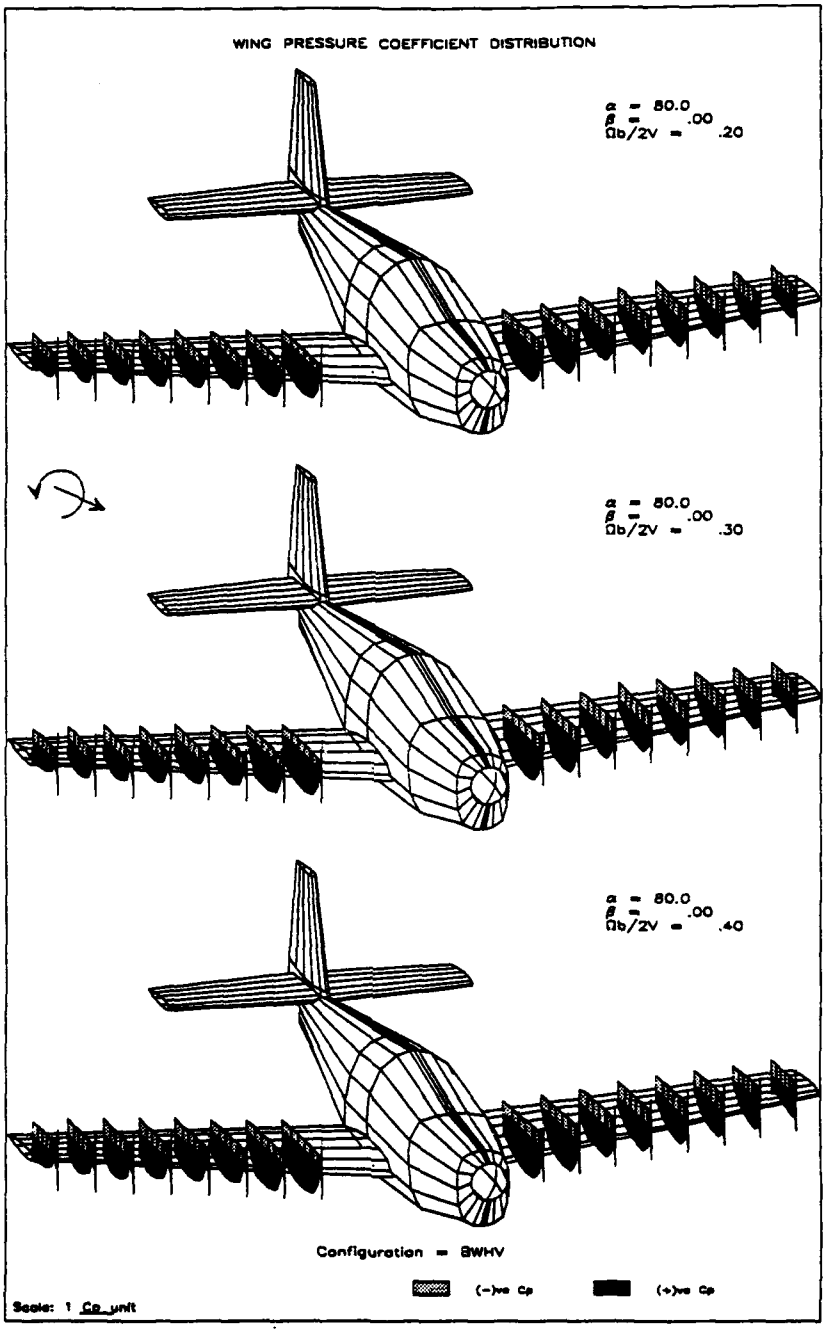


Figure 10 : Wing Pressure Distributions
$\alpha = 80$, $\beta = 0$, $\Omega b/2V = .0 \rightarrow .5$



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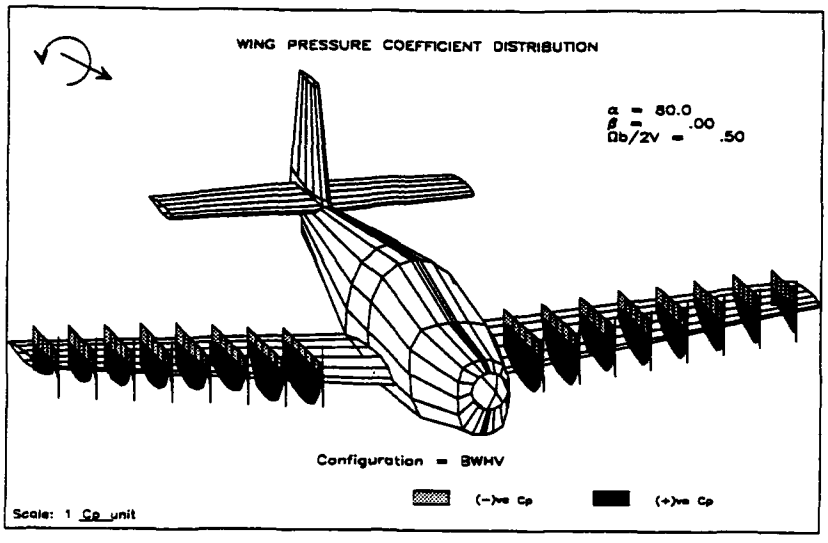

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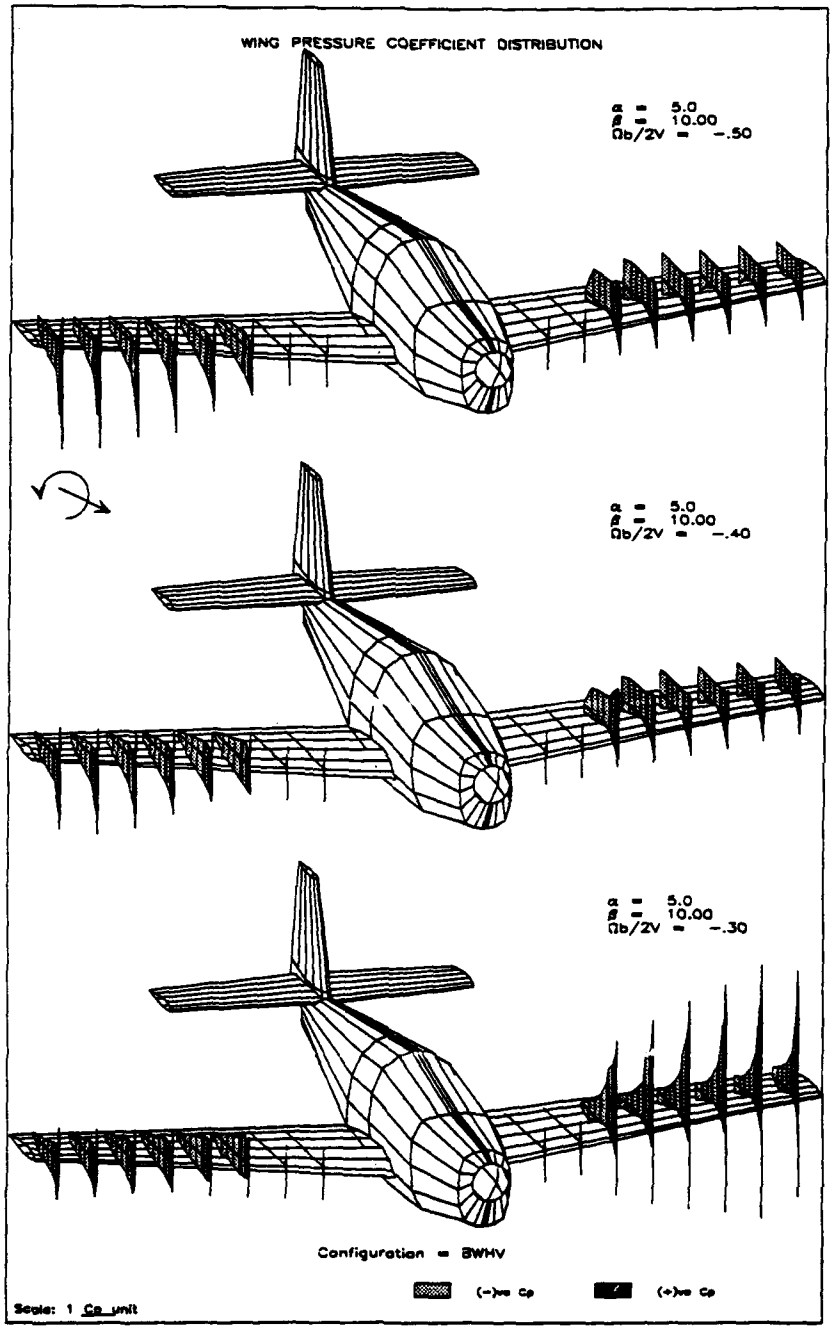

Figure 11 : Wing Pressure Distributions
$\alpha = 5$, $\beta = 10$, $\Omega b/2V = -.5 \rightarrow .5$

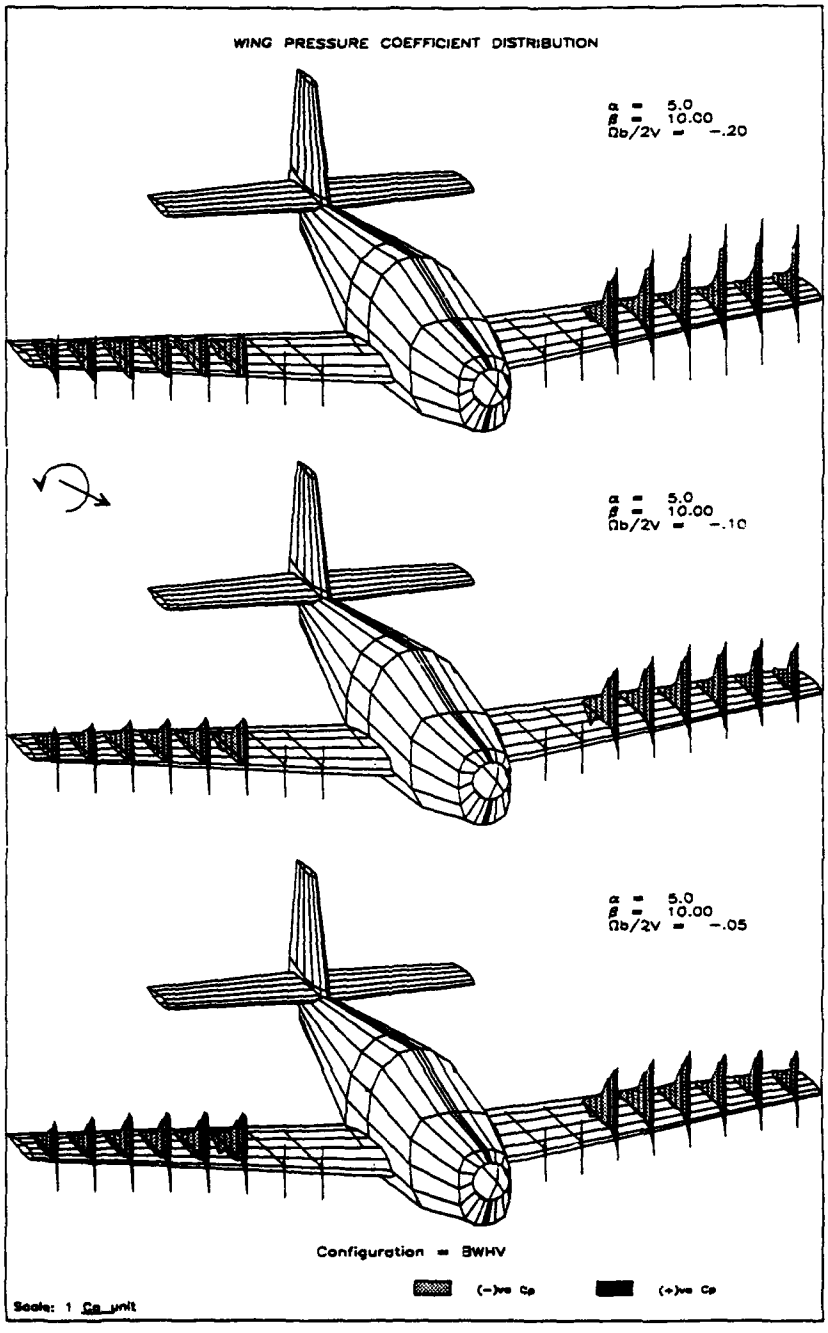

Figure 11 : Wing Pressure Distributions
(Cont.)

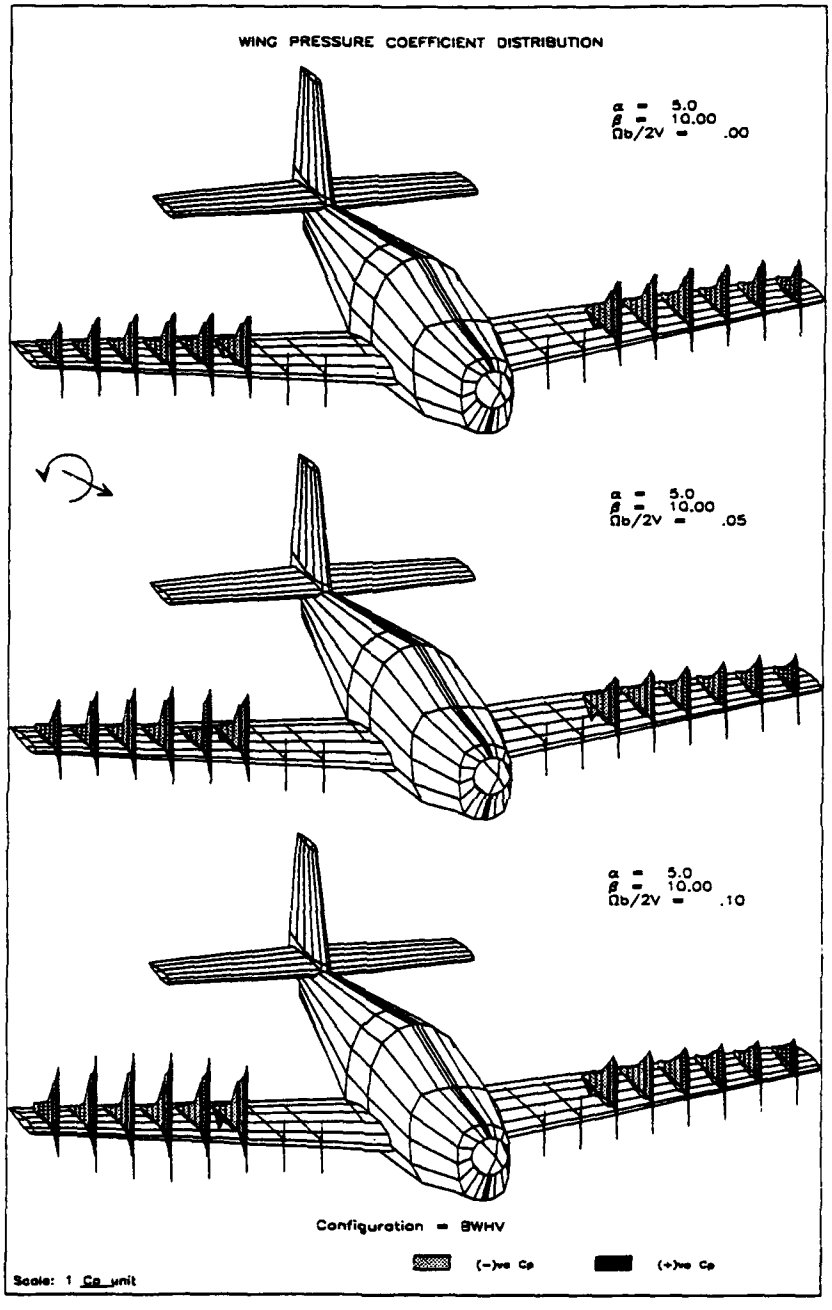

Figure 11 : Wing Pressure Distributions
(Cont.)

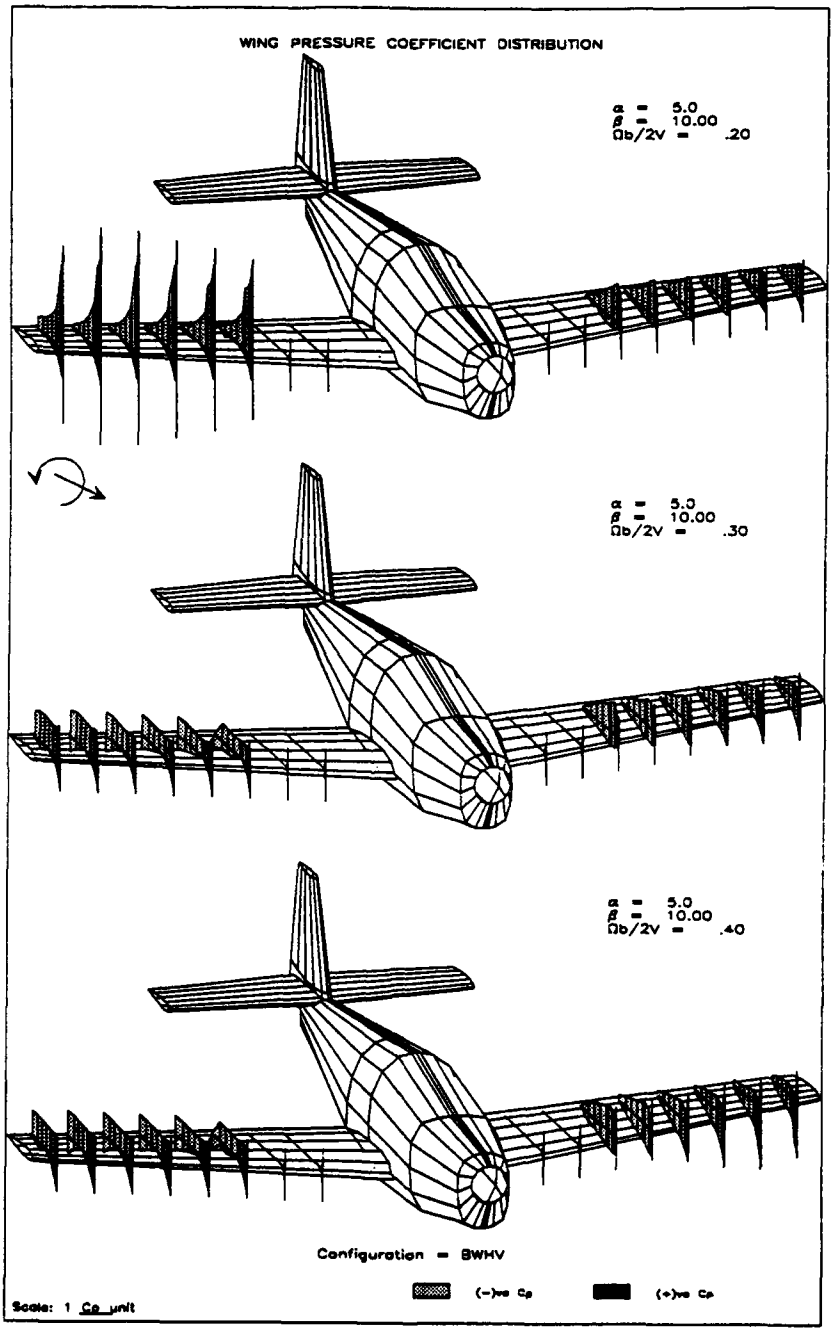

Figure 11 : Wing Pressure Distributions
(Cont.)

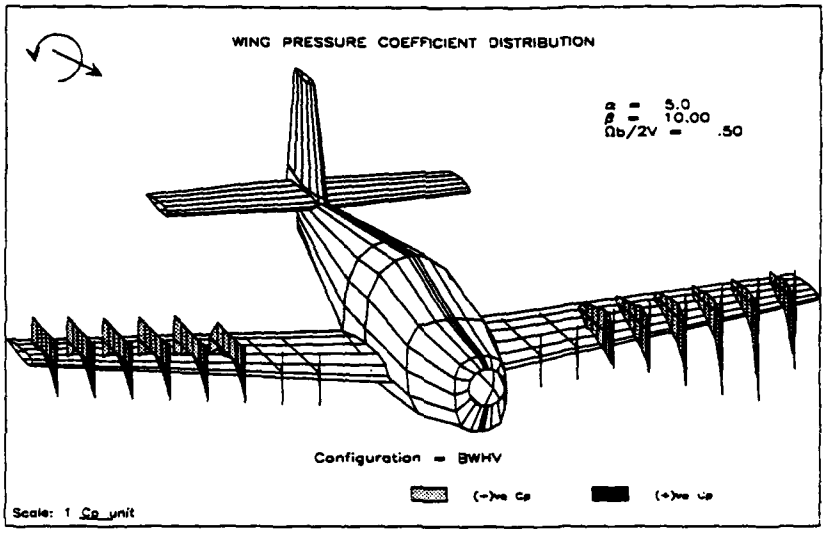

Figure 11 : Wing Pressure Distributions
(Cont.)

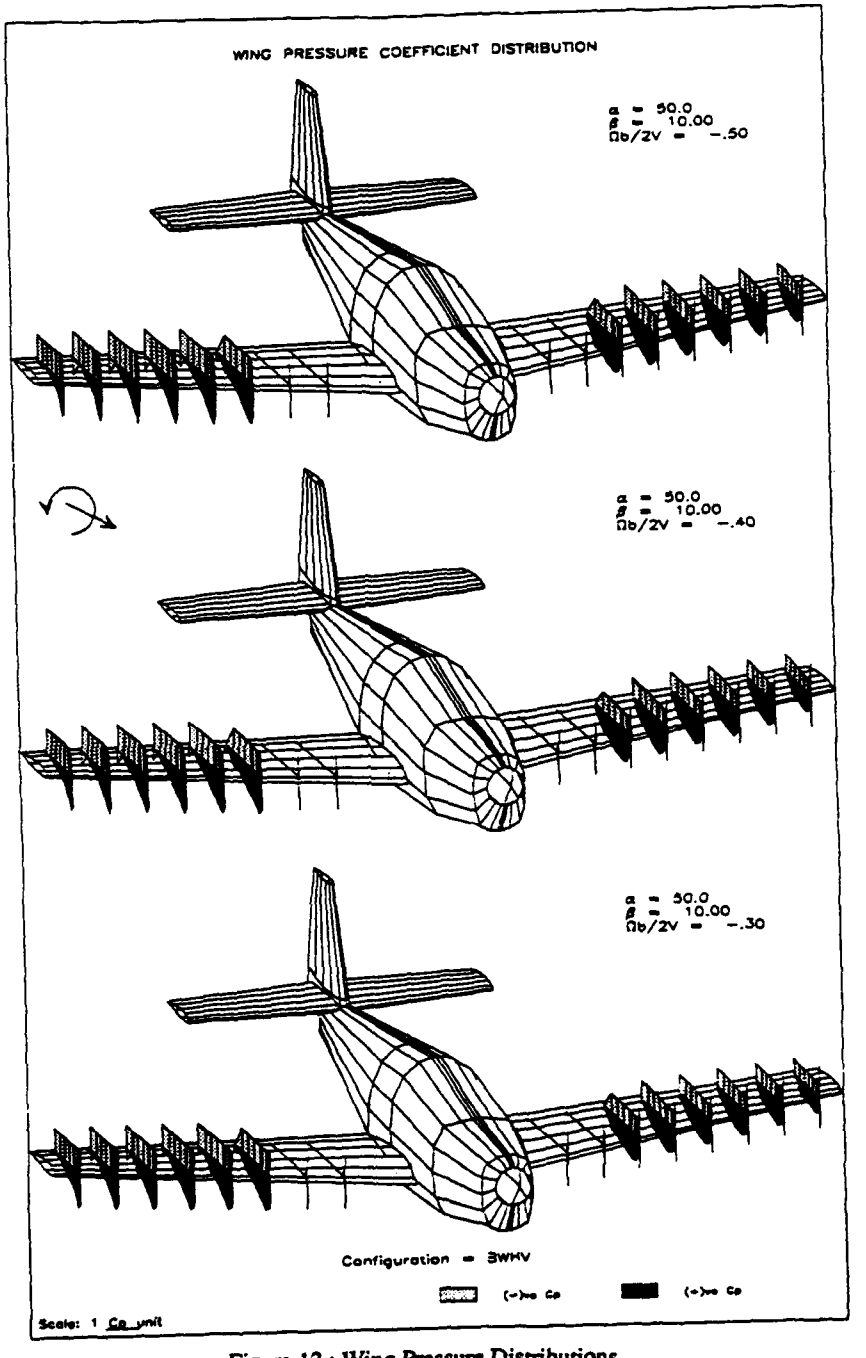

Figure 12 : Wing Pressure Distributions
$\alpha = 50$, $\beta = 10$, $\Omega b/2V = -.5 \rightarrow .5$

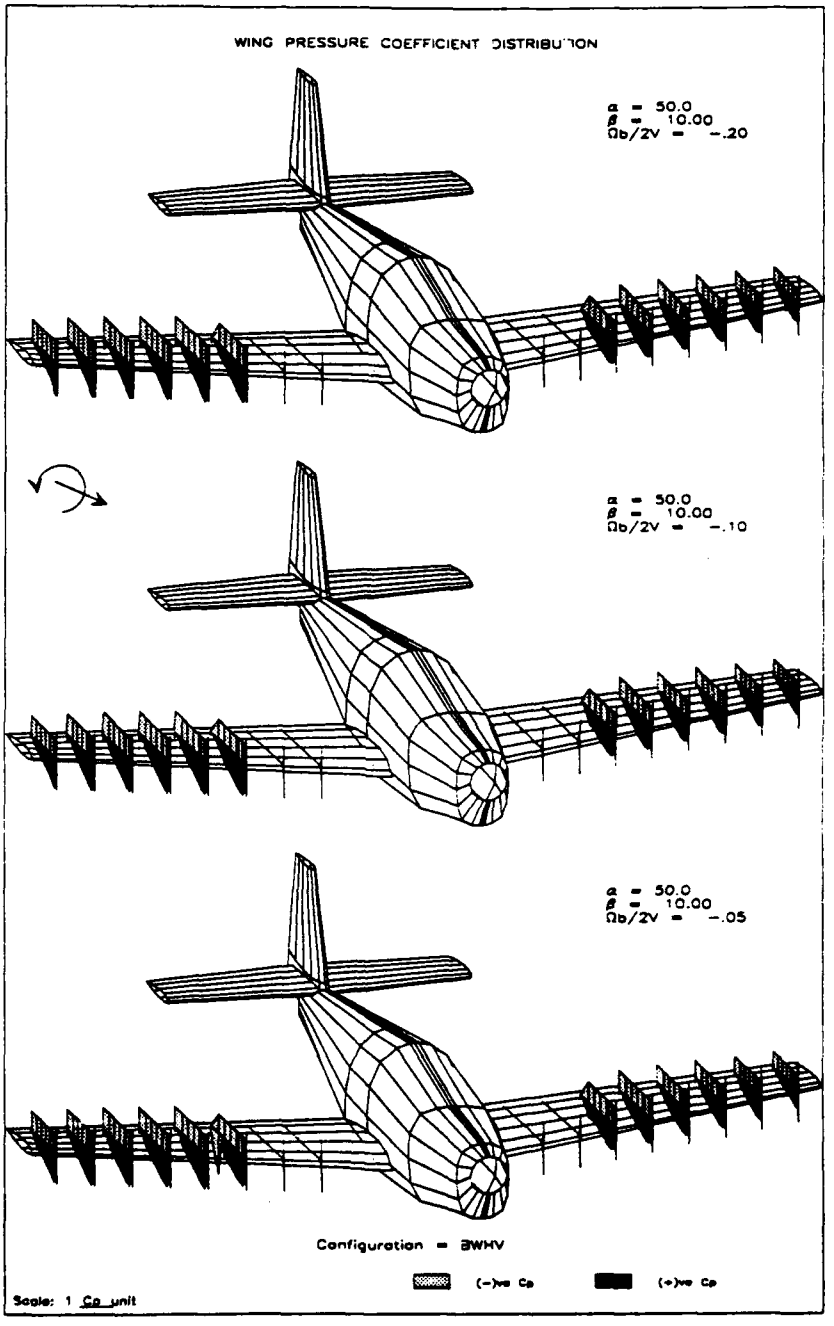

Figure 12 : Wing Pressure Distributions
(Cont.)

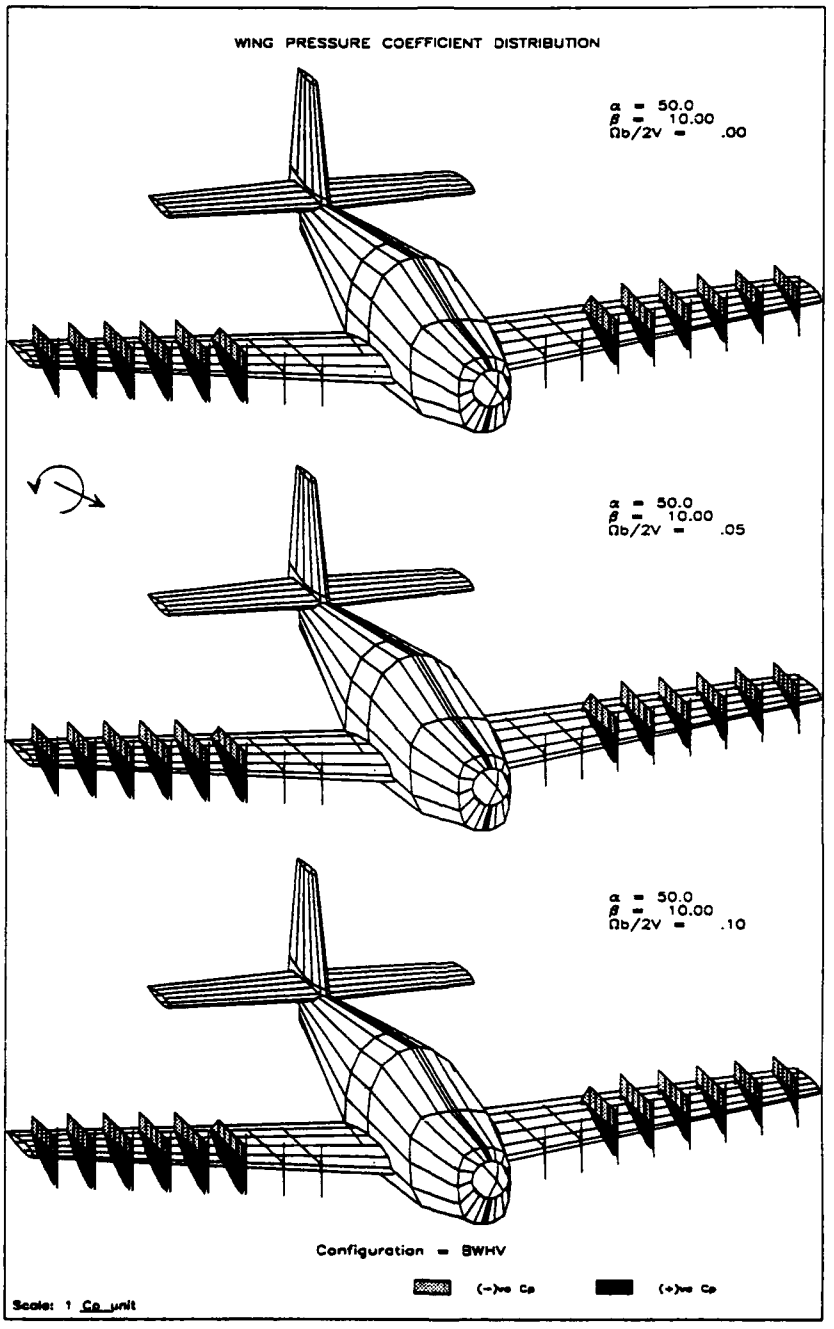

Figure 12 : Wing Pressure Distributions
(Cont.)

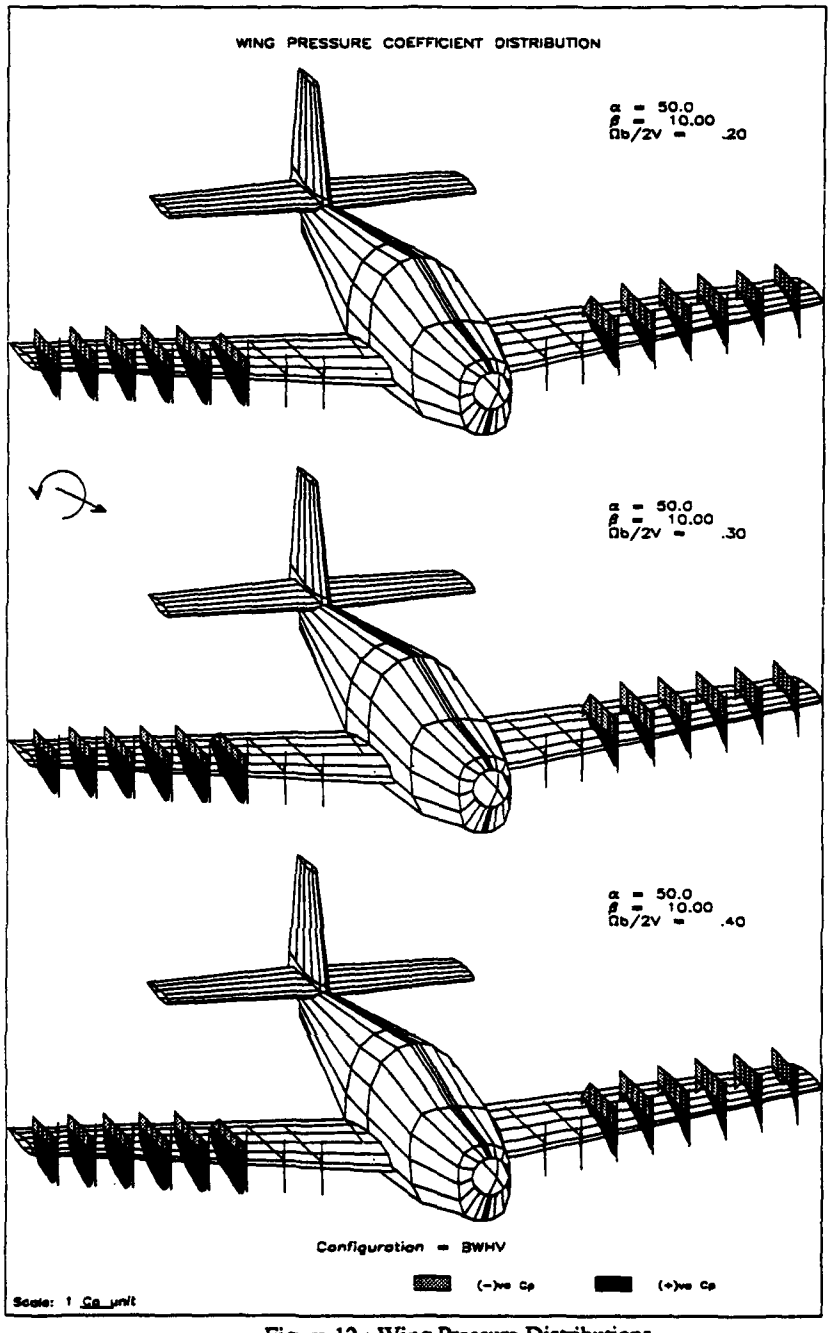

Figure 12 : Wing Pressure Distributions
(Cont.)

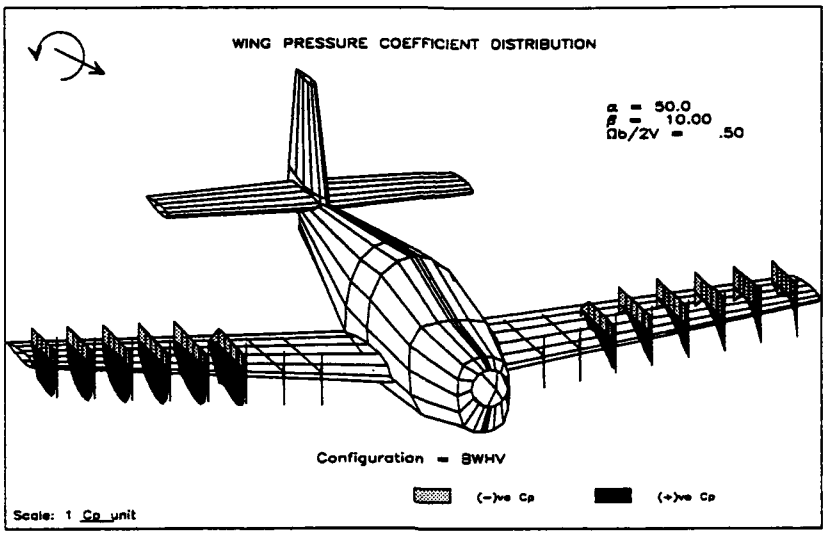

Figure 12 : Wing Pressure Distributions
(Cont.)

Table 1 : Model Dimensions (from reference 2)

Overall Length, ft.	4.33
Wing	
Area, ft^2.	4.389
Span, ft.	5.153
Mean Aerodynamic chord, ft.	0.882
Root Chord (without cuff), ft.	1.069
Centerline Chord (without cuff), ft.	1.135
Tip Chord, ft.	0.567
Airfoil section (centerline)	NACA 23018
Airfoil section (tip)	NACA 23012
Aspect Ratio	6.05
Taper Ratio	0.5
Leading-edge Sweep, deg.	3.2
Trailing-edge Sweep, deg.	-9.4
Dihedral, deg.	7.0
Incidence Relative to FRL, deg.	3.0
Horizontal Tail	
Area, ft^2.	1.183
Span, ft.	2.109
Root Chord, ft.	0.666
Tip Chord, ft.	0.462
Mean Chord, ft.	0.567
Airfoil section	NACA 0012
Aspect Ratio	3.75
Taper Ratio	0.7
Leading-edge Sweep, deg.	5.9
Trailing-edge Sweep, deg.	-4.8
Incidence Relative to FRL, deg.	0
Dihedral, deg.	0
Distance from 25% Wing c to 25% Tailplane c, ft.	2.345
Vertical Tail	
Area, ft^2.	0.635
Tip Height above FRL, ft.	0.941
Tip Height above Fuselage, ft.	0.774
Root Chord (at WL = 0.62), ft.	0.941
Tip Chord, ft.	0.407
Airfoil Section	NACA 0012
Aspect Ratio	1.25
Taper Ratio	0.43
Leading-edge Sweep, deg.	19.8
Trailing-edge Sweep, deg.	-13.5
Distance from 25% c Wing to Fin Centre of Pressure, ft.	2.371

Table 2 : Configuration Tested & α, β Ranges

Configuration	α deg.	β deg.
Right Upper Wing & Left Lower Wing Pressure Measurements		
BWHV (Complete) (body + wing + horizontal + vertical)	5,20,50,80	0
BWHV (Complete) (body + wing + horizontal + vertical)	5,50	10
BWHV (Complete) (body + wing + horizontal + vertical)	5,50	-10

Alpha = 5.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
31	-.7073	-.9060	-1.1256	-1.4279	-1.7122	-1.8262	-1.9302
32	-1.0044	-1.1391	-1.2815	-1.4775	-1.6550	-1.7221	-1.8281
34	-.8330	-.9484	-1.0493	-1.1831	-1.3121	-1.3763	-1.4322
35	-.7554	-.8192	-.9048	-1.0327	-1.1348	-1.1700	-1.1881
36	-.5817	-.6436	-.6687	-.7224	-.7627	-.7942	-.8392
37	-.4280	-.4390	-.4690	-.4938	-.5434	-.5572	-.5953
38	-.2696	-.2766	-.2992	-.3129	-.3414	-.3519	-.3685
40	-.0585	-.0673	-.0611	-.0593	-.0796	-.0882	-.1048
61	-.3309	-.5513	-.8243	-1.1646	-1.5102	-1.6632	-1.8176
62	-.6929	-.8891	-1.0951	-1.3615	-1.5970	-1.7132	-1.8026
64	-.7220	-.8426	-.9545	-1.1122	-1.2711	-1.3386	-1.4400
65	-.6736	-.7523	-.8661	-.9993	-1.1607	-1.2611	-1.3699
66	-.5292	-.5893	-.6615	-.7684	-.7129	-.7311	-.7775
67	-.4003	-.4532	-.4491	-.4617	-.5284	-.5441	-.5577
68	-.2966	-.2715	-.2730	-.2974	-.3360	-.3429	-.3605
70	-.0731	-.0688	-.0597	-.0586	-.1020	-.1018	-.1081
91	-.0585	-.3002	-.5948	-.9513	-1.3399	-1.5178	-1.6989
92	-.4157	-.6166	-.8555	-1.1218	-1.4124	-1.5437	-1.6758
94	-.5187	-.6433	-.7939	-.9489	-1.1235	-1.2145	-1.3168
95	-.4972	-.6007	-.7252	-.8505	-1.0335	-1.1321	-1.2628
96	-.4063	-.4650	-.5436	-.6555	-.6491	-.6504	-.7054
97	-.3146	-.3588	-.4318	-.3974	-.4508	-.4782	-.5053
98	-.2284	-.2599	-.2236	-.2464	-.2901	-.3008	-.3098
100	-.1027	-.0744	-.0509	-.0660	-.1137	-.1130	-.1023
121	.1740	-.0920	-.4228	-.8224	-1.2754	-1.4867	-1.7065
122	-.2405	-.4632	-.7328	-1.0410	-1.3743	-1.5215	-1.6505
124	-.4018	-.5310	-.7027	-.8781	-1.0703	-1.1760	-1.3051
125	-.4021	-.5038	-.6410	-.7961	-.9750	-1.1006	-1.2378
126	-.3517	-.4050	-.4857	-.6014	-.6374	-.6178	-.6595
127	-.2855	-.3174	-.3792	-.3968	-.4278	-.4545	-.4643
128	-.2033	-.2352	-.2390	-.2364	-.2836	-.2950	-.2895
130	-.1242	-.0863	-.0607	-.0722	-.1120	-.1078	-.0920
151	.3436	.0806	-.2618	-.6963	-1.1755	-1.4247	-1.6695
152	-.0621	-.2971	-.5881	-.9206	-1.2727	-1.4571	-1.5987
154	-.3023	-.4465	-.6196	-.8186	-1.0156	-1.1242	-1.2451
155	-.3158	-.4363	-.5771	-.7250	-.9227	-1.0491	-1.2086
156	-.3109	-.3679	-.4464	-.5363	-.6637	-.5787	-.6037
157	-.2667	-.2958	-.3483	-.4099	-.4003	-.4322	-.4316
158	-.2024	-.2118	-.2678	-.2107	-.2620	-.2631	-.2635
160	-.1080	-.1369	-.0824	-.0775	-.1170	-.0990	-.0960
181	.4704	.2495	-.0992	-.5249	-1.0417	-1.3134	-1.5818
182	.0486	-.1554	-.4577	-.8029	-1.1925	-1.3771	-1.5360
184	-.2283	-.3499	-.5337	-.7360	-.9392	-1.0626	-1.1867
185	-.2581	-.3499	-.5017	-.6544	-.8400	-.9755	-1.1588
186	-.2866	-.3134	-.3888	-.4795	-.6562	-.5453	-.5722
187	-.2616	-.2462	-.2935	-.3747	-.3635	-.3907	-.4184
188	-.2179	-.1676	-.2143	-.1953	-.2443	-.2537	-.2602
190	-.1834	-.0797	-.0880	-.0728	-.1199	-.1038	-.0864
211	.5515	.3946	.0614	-.3755	-.9080	-1.1644	-1.4715
212	.1359	-.0218	-.3252	-.6773	-1.0767	-1.2558	-1.4563
214	-.1689	-.2725	-.4553	-.6592	-.8691	-.9668	-1.1240
215	-.2066	-.2865	-.4315	-.6034	-.7777	-.8861	-1.0763
216	-.2517	-.2756	-.3519	-.4456	-.6170	-.5694	-.5208
217	-.2384	-.2306	-.2720	-.3520	-.3355	-.3568	-.3712
218	-.2068	-.1658	-.1925	-.2355	-.2198	-.2258	-.2343
220	-.1979	-.0964	-.1112	-.0861	-.1128	-.0940	-.0892
241	.5706	.4236	.1173	-.2753	-.7154	-.9474	-1.2459
242	.1422	-.0100	-.2793	-.5933	-.9077	-1.0709	-1.2717
244	-.1772	-.2627	-.4158	-.5780	-.7285	-.8182	-.9505
245	-.2135	-.2706	-.3892	-.5104	-.6438	-.7314	-.8845
246	-.2673	-.2731	-.3288	-.3809	-.4843	-.5130	-.4698
247	-.2649	-.2446	-.2630	-.2911	-.3031	-.3228	-.3647
248	-.2296	-.1887	-.1868	-.2212	-.1880	-.2203	-.2559
250	-.2140	-.1423	-.1126	-.0761	-.0933	-.1176	-.1307

Table 3 : Wing Pressure Coefficient Values
$\alpha = 5$ deg. , $\beta = .0$ deg.

Alpha = 5.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
31	-1.9302	-2.0713	-2.1968	-2.4136	-1.7487	-1.6344	-1.5803
32	-1.8281	-1.9145	-2.0407	-2.2048	-1.5378	-1.4161	-1.3226
34	-1.4322	-1.4682	-1.5248	-1.6131	-1.2102	-1.0950	-1.1094
35	-1.1881	-1.2376	-1.2783	-1.3617	-.9946	-.9575	-1.0366
36	-.8392	-.8357	-.8674	-.9227	-.7431	-.8338	-.9579
37	-.5953	-.5790	-.5926	-.6162	-.6592	-.8275	-.9613
38	-.3685	-.3573	-.3681	-.3572	-.5925	-.7520	-.9226
40	-.1048	-.0968	-.0902	-.0928	-.4405	-.5971	-.7282
61	-1.8176	-1.9834	-2.1299	-2.4489	-1.3154	-1.1206	-1.0518
62	-1.8026	-1.9276	-2.0160	-2.2261	-1.0841	-.9640	-1.0424
64	-1.4400	-1.5301	-1.6341	-1.8797	-.9934	-.8989	-.9592
65	-1.3699	-1.4944	-1.6020	-1.7820	-.8405	-.8532	-.9289
66	-.7775	-.8142	-.8376	-.8948	-.7463	-.8058	-.9550
67	-.5577	-.5633	-.5780	-.6098	-.7473	-.8419	-.9584
68	-.3605	-.3504	-.3432	-.3444	-.7391	-.8574	-.9673
70	-.1081	-.1002	-.0849	-.0831	-.5933	-.7498	-.8792
91	-1.6989	-1.8630	-2.0433	-2.4406	-.7823	-.7494	-.8042
92	-1.6758	-1.7575	-1.8965	-2.1376	-.7512	-.7673	-.8190
94	-1.3168	-1.3951	-1.5459	-1.8929	-.7574	-.7385	-.8043
95	-1.2628	-1.3747	-1.5324	-1.5695	-.7183	-.7160	-.7843
96	-.7054	-.7153	-.7666	-.8301	-.6588	-.7027	-.7655
97	-.5053	-.5153	-.5252	-.5419	-.6811	-.7056	-.8197
98	-.3098	-.3072	-.3134	-.3174	-.6812	-.7297	-.8364
100	-.1023	-.0890	-.0822	-.0763	-.6546	-.7880	-.8466
121	-1.7065	-1.9108	-2.1439	-2.5917	-.6524	-.6677	-.7527
122	-1.6505	-1.7737	-1.9345	-2.2043	-.5997	-.6829	-.7827
124	-1.3051	-1.4258	-1.6136	-2.0667	-.6140	-.6622	-.7265
125	-1.2378	-1.4079	-1.5818	-1.2986	-.6002	-.6519	-.7183
126	-.6595	-.7006	-.7506	-.8165	-.5926	-.6459	-.7079
127	-.4643	-.4898	-.5018	-.5209	-.6191	-.6444	-.7221
128	-.2895	-.3090	-.3032	-.3063	-.6271	-.6675	-.7645
130	-.0920	-.0889	-.0785	-.0783	-.6069	-.6486	-.7715
151	-1.6695	-1.9191	-2.1746	-2.6845	-.5631	-.6180	-.7471
152	-1.5987	-1.7625	-1.9326	-2.3049	-.5817	-.6378	-.7420
154	-1.2451	-1.4330	-1.6457	-2.2004	-.5936	-.6210	-.6911
155	-1.2086	-1.4106	-1.6254	-1.2314	-.5844	-.6292	-.6998
156	-.6037	-.6691	-.7233	-.8023	-.5634	-.6119	-.7018
157	-.4316	-.4657	-.4873	-.5218	-.6020	-.6269	-.7096
158	-.2635	-.2832	-.2858	-.2975	-.6174	-.6335	-.7340
160	-.0960	-.0907	-.0830	-.0906	-.5902	-.6350	-.7026
181	-1.5818	-1.8625	-2.1547	-2.7413	-.6239	-.6427	-.7101
182	-1.5360	-1.7125	-1.8838	-2.3733	-.6339	-.6344	-.7061
184	-1.1867	-1.4034	-1.6410	-2.0499	-.6374	-.6122	-.6848
185	-1.1588	-1.3792	-1.6565	-1.1942	-.6148	-.6083	-.6962
186	-.5722	-.6271	-.6920	-.7936	-.6303	-.6273	-.6855
187	-.4184	-.4425	-.4627	-.5019	-.6351	-.6509	-.6772
188	-.2602	-.2726	-.2751	-.2870	-.6527	-.6519	-.7050
190	-.0864	-.0854	-.0865	-.1048	-.6427	-.6401	-.7092
211	-1.4715	-1.7627	-2.0718	-2.7398	-.6998	-.6602	-.6774
212	-1.4563	-1.6339	-1.7975	-2.4027	-.7133	-.6589	-.6681
214	-1.1240	-1.3374	-1.5908	-1.7236	-.7039	-.6320	-.6543
215	-1.0763	-1.2920	-1.5991	-1.1897	-.7006	-.6361	-.6542
216	-.5208	-.5761	-.6499	-.7773	-.7084	-.6626	-.6652
217	-.3712	-.3977	-.4466	-.5097	-.7285	-.6865	-.6891
218	-.2343	-.2463	-.2754	-.3162	-.7697	-.7154	-.6944
220	-.0892	-.0863	-.0992	-.1321	-.7325	-.6991	-.6923
241	-1.2459	-1.5064	-1.8245	-2.4600	-.8729	-.6589	-.6661
242	-1.2717	-1.4538	-1.6576	-2.1502	-.8397	-.6724	-.6654
244	-.9505	-1.1141	-1.3292	-1.6681	-.7605	-.6490	-.6694
245	-.8845	-1.0449	-1.2793	-1.0468	-.7516	-.6515	-.6707
246	-.4698	-.5306	-.6177	-.8023	-.7567	-.6684	-.6698
247	-.3647	-.4214	-.4820	-.6373	-.7921	-.7223	-.6896
248	-.2559	-.2950	-.3346	-.4641	-.8046	-.7345	-.6785
250	-.1307	-.1633	-.1904	-.3054	-.7767	-.7680	-.6966

Table 3 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg. , $\beta = .0$ deg.

Alpha = 5.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
291	.5229	.4230	.3682	.4606	.3716	.3215	.2687
292	.2521	.1767	.1093	.2015	.1214	.0759	.0311
294	.0219	-.0429	-.0891	-.0070	-.0483	-.0892	-.1218
295	-.0515	-.1199	-.1472	-.0701	-.1141	-.1385	-.1654
296	-.1727	-.1951	-.2327	-.1322	-.1590	-.1826	-.1933
297	-.2341	-.2321	-.2498	-.1519	-.1540	-.1636	-.1640
298	-.2677	-.2685	-.2661	-.1459	-.1397	-.1317	-.1426
300	-.3072	-.2774	-.2406	-.1112	-.0764	-.0600	-.0650
321	.7104	.6093	.5108	.6295	.5224	.4563	.3788
322	.4226	.3328	.2459	.3478	.2473	.1974	.1271
324	.1239	.0580	-.0228	.0832	.0070	-.0349	-.0766
325	.0261	-.0370	-.0925	.0095	-.0645	-.0974	-.1275
326	-.1222	-.1659	-.1917	-.0959	-.1151	-.1417	-.1584
327	-.1879	-.2247	-.2441	-.0945	-.1155	-.1249	-.1465
328	-.2911	-.2953	-.2838	-.0952	-.0955	-.1023	-.1063
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	.7774	.6787	.5788	.6934	.5649	.4903	.4021
352	.5258	.4099	.3263	.4219	.3071	.2300	.1535
354	.2261	.1395	.0660	.1668	.0708	.0305	-.0386
355	.1249	.0445	-.0272	.0791	.0000	-.0280	-.1057
356	-.0676	-.1093	-.1400	-.0256	-.0704	-.1046	-.1438
357	-.1742	-.2013	-.2128	-.0589	-.0776	-.0979	-.1195
358	-.1017	-.1380	-.0265	.1989	.2912	.0086	.1797
360	-.4965	-.4559	-.4006	-.0044	.0226	.0099	.0147
381	.8200	.7347	.6088	.7653	.6144	.5244	.4444
382	.5979	.4851	.3569	.5070	.3417	.2586	.1962
384	.3141	.2067	.1097	.2534	.1271	.0543	.0230
385	.1959	.1233	.0168	.1640	.0678	-.0058	-.0341
386	.0017	-.0608	-.1282	.0312	-.0263	-.0782	-.0945
387	-.1362	-.1668	-.2136	-.0216	-.0437	-.0797	-.0963
388	-.2919	-.2768	-.3005	-.0473	-.0465	-.0700	-.0823
390	-.5512	-.5002	-.4497	-.0231	.0131	.0154	.0021
411	.8375	.7625	.6296	.7969	.6419	.5467	.4000
412	.6464	.5292	.4035	.5500	.3920	.3051	.1690
414	.3588	.2715	.1600	.2958	.1719	.0982	-.0057
415	.2596	.1748	.0671	.2054	.0964	.0352	-.0650
416	.0241	-.0197	-.0952	.0565	-.0084	-.0503	-.1137
417	-.1116	-.1600	-.1699	.0041	-.0361	-.0645	-.0946
418	-.2666	-.2850	-.2805	-.0441	-.0471	-.0526	-.0552
420	-.5501	-.5078	-.4397	-.0527	-.0043	.0077	.0280
441	.8848	.7875	.6918	.8231	.6506	.5562	.4323
442	.6968	.5526	.4382	.5785	.3960	.2965	.1900
444	.4154	.3032	.2038	.3250	.1846	.0997	.0232
445	.3169	.1901	.1068	.2319	.1071	.0460	-.0355
446	.0892	.0002	-.0566	.0858	-.0003	-.0458	-.0999
447	-.0694	-.1329	-.1623	.0200	-.0300	-.0500	-.0954
448	-.2174	-.2428	-.2593	-.0233	-.0393	-.0547	-.0645
450	-.5372	-.4891	-.4664	-.0750	-.0119	-.0099	.0033
471	.9000	.8053	.7018	.8338	.6601	.5475	.3764
472	.7147	.5863	.4678	.6032	.4121	.3058	.1665
474	.4641	.3505	.2332	.3447	.2024	.1258	.0248
475	.3474	.2180	.1333	.2474	.1205	.0513	-.0272
476	.1196	.0456	-.0368	.0950	.0060	-.0376	-.0890
477	-.0249	-.0971	-.1490	.0170	-.0366	-.0747	-.0831
478	-.1950	-.2046	-.2550	-.0297	-.0543	-.0666	-.0723
480	-.4788	-.4708	-.4772	-.0833	-.0322	-.0122	-.0196
501	.8292	.7401	.6346	.7528	.5477	.4224	.2604
502	.6222	.5234	.3923	.4896	.3158	.2035	.0789
504	.3770	.2826	.1726	.2446	.1255	.0470	-.0300
505	.2732	.1889	.0839	.1599	.0596	-.0061	-.0751
506	.0833	.0090	-.0632	.0383	-.0369	-.0751	-.1233
507	-.0541	-.1133	-.1518	-.0190	-.0649	-.0944	-.1172
508	-.1503	-.1977	-.2296	-.0367	-.0730	-.0926	-.0919
510	-.3737	-.3789	-.3315	-.0293	-.0063	-.0044	-.0251

Table 3 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg., $\beta = .0$ deg.

Alpha = 5.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
291	.2687	.2111	.1459	-.0051	-.2259	-.4276	-.5732
292	.0311	-.0099	-.0641	-.1776	-.3650	-.4729	-.5897
294	-.1218	-.1441	-.1852	-.2776	-.3828	-.5117	-.5631
295	-.1654	-.1973	-.2208	-.3125	-.4197	-.5072	-.5739
296	-.1933	-.2094	-.2316	-.3047	-.3806	-.4115	-.4456
297	-.1640	-.1733	-.1880	-.2622	-.2937	-.3189	-.3692
298	-.1426	-.1288	-.1415	-.1902	-.2384	-.2284	-.2619
300	-.0650	-.0657	-.0747	-.1158	-.0891	-.0461	-.0939
321	.3788	.3139	.2267	.0299	-.2496	-.4619	-.6977
322	.1271	.0685	-.0136	-.1599	-.3717	-.5349	-.7346
324	-.0766	-.1186	-.1823	-.2818	-.4432	-.5570	-.6934
325	-.1275	-.1774	-.2169	-.3202	-.4410	-.5564	-.6720
326	-.1584	-.1857	-.2149	-.3041	-.3730	-.4424	-.5295
327	-.1465	-.1479	-.1691	-.2378	-.2861	-.3434	-.4187
328	-.1063	-.1043	-.1085	-.1855	-.2325	-.2702	-.3340
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	.4021	.2937	.1927	-.0299	-.4120	-.7099	-1.0531
352	.1535	.0690	-.0091	-.1931	-.4952	-.7097	-.9563
354	-.0386	-.1019	-.1605	-.2875	-.5138	-.6436	-.7996
355	-.1057	-.1623	-.1871	-.3113	-.5138	-.6259	-.7459
356	-.1438	-.1750	-.1939	-.2836	-.4282	-.4989	-.5870
357	-.1195	-.1447	-.1627	-.2223	-.3325	-.3947	-.4575
358	.1797	.2186	.4046	.2659	.2427	-.0956	-.0876
360	.0147	.0121	-.0466	-.0994	-.1427	-.0773	-.0781
381	.4444	.3442	.1823	-.1422	-.5549	-.9801	-1.4060
382	.1962	.0984	-.0330	-.2852	-.5811	-.8990	-1.2007
384	.0230	-.0809	-.1475	-.3370	-.5334	-.7421	-.9405
385	-.0341	-.1296	-.1870	-.3482	-.5088	-.6946	-.8552
386	-.0945	-.1576	-.1930	-.3075	-.4209	-.5558	-.6538
387	-.0963	-.1269	-.1426	-.2386	-.3372	-.4426	-.4603
388	-.0823	-.0828	-.0818	-.1657	-.2689	-.3072	-.3313
390	.0021	-.0144	-.0116	-.1112	-.1225	-.1036	-.1200
411	.4000	.2751	.1499	-.2592	-.7813	-1.2788	-1.7760
412	.1690	.0700	-.0353	-.3497	-.7361	-1.0902	-1.4551
414	-.0057	-.0812	-.1460	-.3642	-.6258	-.8433	-1.1111
415	-.0650	-.1037	-.1887	-.3668	-.5849	-.7771	-.9100
416	-.1137	-.1197	-.2180	-.3289	-.4900	-.6222	-.6950
417	-.0946	-.1107	-.1823	-.2610	-.3789	-.4544	-.5070
418	-.0552	-.0936	-.1210	-.1921	-.2910	-.3206	-.3699
420	.0280	-.0267	-.0270	-.1458	-.0789	-.1233	-.1765
441	.4323	.2461	.1031	-.3924	-.9405	-1.5418	-2.0511
442	.1900	.0607	-.0727	-.4450	-.8249	-1.2526	-1.8470
444	.0232	-.0649	-.1631	-.4182	-.6652	-.9638	-1.0015
445	-.0355	-.1396	-.1867	-.4053	-.6171	-.8462	-.9519
446	-.0999	-.2304	-.1909	-.3477	-.5021	-.6185	-.7257
447	-.0954	-.1198	-.1593	-.2596	-.4010	-.4513	-.5314
448	-.0645	-.0695	-.1029	-.1818	-.2736	-.3334	-.3766
450	.0033	-.0407	-.0227	-.1240	-.1001	-.1714	-.1972
471	.3764	.2468	.0192	-.4654	-1.0849	-1.7003	-2.1857
472	.1665	.0324	-.1203	-.4594	-.8972	-1.4392	-2.2108
474	.0248	-.0530	-.1824	-.4032	-.6896	-.9051	-1.2083
475	-.0272	-.0768	-.2005	-.3859	-.6213	-.7924	-1.0174
476	-.0890	-.1542	-.1961	-.3392	-.5074	-.6352	-.7366
477	-.0831	-.1679	-.1520	-.2643	-.3747	-.4707	-.5402
478	-.0723	-.1048	-.1065	-.2090	-.2432	-.3478	-.3858
480	-.0196	-.0529	-.0391	-.1547	-.0948	-.1915	-.2344
501	.2604	.0507	-.1353	-.6087	-1.1273	-1.5887	-1.9746
502	.0789	-.0276	-.1985	-.5012	-.8474	-1.5611	-2.0426
504	-.0300	-.0909	-.2193	-.3898	-.6640	-.7287	-1.4179
505	-.0751	-.1292	-.2302	-.3566	-.5599	-.6793	-1.1205
506	-.1233	-.1744	-.2237	-.3092	-.4400	-.5826	-.7139
507	-.1172	-.1366	-.1808	-.2508	-.3391	-.4563	-.5397
508	-.0919	-.1185	-.1244	-.2117	-.2586	-.3619	-.4477
510	-.0251	-.0280	-.0394	-.1103	-.1280	-.0751	-.0469

Table 3 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg. , $\beta = 0$ deg.

Alpha = 20.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
31	-1.3742	-3.3507	-.7647	-.6599	-.6266	-.5921	-.5582
32	-2.7809	-2.5634	-.6427	-.6026	-.5582	-.5734	-.5599
34	-1.5699	-1.5946	-.7266	-.5774	-.5645	-.5698	-.5424
35	-1.3302	-1.3699	-.6415	-.6559	-.5926	-.5639	-.5414
36	-.7900	-.8125	-.6979	-.6700	-.6104	-.5684	-.5955
37	-.4262	-.8101	-.8135	-.6443	-.6345	-.6040	-.6090
38	-.2376	-.7956	-.7349	-.6453	-.6231	-.5913	-.5685
40	-.2135	-.4580	-.5655	-.5608	-.5612	-.5529	-.5490
61	-2.9480	-.7510	-.5966	-.6107	-.5595	-.5479	-.5250
62	-2.5333	-.6159	-.6570	-.5981	-.5614	-.5670	-.5382
64	-2.2655	-.7414	-.6780	-.5824	-.5524	-.5566	-.5639
65	-1.2412	-.8230	-.8026	-.5518	-.5493	-.5319	-.5344
66	-.9267	-.7838	-.6309	-.6241	-.5832	-.5814	-.5911
67	-.5560	-.8040	-.6503	-.6618	-.6033	-.5858	-.5586
68	-.2056	-.7186	-.6981	-.6536	-.6127	-.6089	-.6055
70	-.1079	-.5362	-.5842	-.6114	-.5905	-.5700	-.5611
91	-1.1760	-.9401	-.7131	-.6544	-.6285	-.6095	-.5876
92	-2.3110	-.8691	-.7405	-.6828	-.6467	-.6209	-.6051
94	-2.0385	-.8605	-.7753	-.6709	-.6332	-.6149	-.6109
95	-1.7276	-.8356	-.7432	-.6527	-.6011	-.6119	-.5869
96	-.8897	-.8036	-.7433	-.6410	-.6144	-.6195	-.6064
97	-.6123	-.8345	-.7361	-.6557	-.6306	-.6296	-.6369
98	-.3560	-.8326	-.7736	-.6717	-.6465	-.6415	-.6101
100	-.0857	-.6579	-.6591	-.6450	-.6232	-.6040	-.5889
121	-2.3470	-1.4516	-1.0410	-.7387	-.6687	-.6609	-.6633
122	-2.2155	-1.1380	-.9395	-.7631	-.6765	-.6857	-.6837
124	-1.7464	-1.1977	-.9318	-.7545	-.6731	-.6648	-.6654
125	-1.7481	-1.0628	-.9446	-.7336	-.6657	-.6623	-.6203
126	-.8742	-.8396	-.8481	-.7072	-.6450	-.6475	-.6334
127	-.5802	-.8295	-.8480	-.7102	-.6568	-.6634	-.6626
128	-.3954	-.7652	-.8175	-.7370	-.6854	-.6713	-.6464
130	-.0962	-.5746	-.7298	-.7333	-.6957	-.6938	-.6570
151	-2.0191	-1.8392	-1.4175	-.9150	-.7221	-.7016	-.7152
152	-1.9958	-1.5985	-1.1809	-.8887	-.7239	-.7381	-.7529
154	-1.5369	-1.3889	-1.2176	-.9096	-.7188	-.7105	-.7054
155	-1.5148	-1.3490	-1.0912	-.8732	-.7023	-.7064	-.7612
156	-.8290	-.7621	-.9373	-.8503	-.6940	-.6868	-.7182
157	-.5758	-.6571	-.8432	-.8521	-.7044	-.6921	-.6825
158	-.3603	-.5321	-.7727	-.8596	-.7346	-.7278	-.7153
160	-.1301	-.3341	-.5663	-.7816	-.7383	-.7414	-.7295
181	-1.6269	-1.7373	-1.7933	-1.1805	-.8142	-.7852	-.8027
182	-1.7101	-1.7749	-1.5395	-1.1125	-.8117	-.8096	-.7736
184	-1.4003	-1.3294	-1.4396	-1.1341	-.8066	-.7607	-.7839
185	-1.2377	-1.3169	-1.4208	-1.0757	-.8005	-.7510	-.7396
186	-.7871	-.7081	-.8530	-.9952	-.7777	-.7508	-.7346
187	-.5652	-.5371	-.7215	-.9134	-.8073	-.7682	-.7683
188	-.3762	-.3926	-.5701	-.8398	-.8394	-.8196	-.8005
190	-.1738	-.2035	-.3160	-.6356	-.7818	-.7780	-.7819
211	-1.2238	-1.5049	-1.8514	-1.7112	-.9609	-.8749	-.8874
212	-1.4682	-1.6301	-1.7489	-1.4449	-.9628	-.8895	-.8705
214	-1.2057	-1.2719	-1.4142	-1.4737	-.9418	-.8527	-.8205
215	-1.0595	-1.1655	-1.4077	-1.3522	-.9339	-.8452	-.8241
216	-.8734	-.7260	-.7098	-.9307	-.9041	-.8352	-.8475
217	-.5618	-.4955	-.5244	-.7786	-.9195	-.8556	-.8568
218	-.3836	-.3354	-.3559	-.6024	-.9215	-.8784	-.8582
220	-.2047	-.1915	-.2068	-.3874	-.8192	-.8334	-.8074
241	-.8646	-1.1430	-1.5481	-1.7731	-1.1328	-.9928	-.9991
242	-1.1577	-1.3523	-1.5708	-1.5699	-1.0765	-.9880	-.9538
244	-1.0138	-1.0501	-1.2112	-1.3766	-1.1125	-.9379	-.8885
245	-.9064	-.9025	-1.1397	-1.3926	-1.0613	-.9130	-.8366
246	-.7057	-.7362	-.6280	-.7409	-.9737	-.8993	-.8686
247	-.5517	-.4782	-.4905	-.5940	-.9123	-.9044	-.9162
248	-.3735	-.3751	-.3649	-.4747	-.8496	-.8954	-.9093
250	-.2124	-.2113	-.2231	-.3153	-.6548	-.8206	-.8552

Table 4 : Wing Pressure Coefficient Values
$\alpha = 20$ deg., $\beta = 0$ deg.

Alpha = 20.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
31	-.5582	-.5386	-.5152	-.5447	-.5991	-.7112	-.8070
32	-.5599	-.5259	-.5286	-.5302	-.5984	-.6800	-.7730
34	-.5424	-.5310	-.5026	-.5326	-.5912	-.7266	-.7656
35	-.5414	-.5411	-.5083	-.5164	-.6137	-.6627	-.7606
36	-.5955	-.5373	-.5323	-.5305	-.6044	-.6959	-.7929
37	-.6090	-.5602	-.5633	-.5274	-.5824	-.6779	-.7768
38	-.5685	-.5754	-.5000	-.5423	-.6455	-.7064	-.8219
40	-.5490	-.5306	-.5263	-.4936	-.6796	-.7406	-.8040
61	-.5250	-.5616	-.4938	-.5131	-.6182	-.7448	-.8002
62	-.5382	-.5341	-.5554	-.5264	-.5983	-.6859	-.8106
64	-.5639	-.5259	-.4890	-.5213	-.5772	-.6973	-.7832
65	-.5344	-.5301	-.4983	-.5007	-.5554	-.6878	-.7777
66	-.5911	-.5458	-.5542	-.5249	-.5814	-.6843	-.7856
67	-.5586	-.5625	-.5282	-.5415	-.6020	-.7306	-.7391
68	-.6055	-.5670	-.5791	-.5435	-.5927	-.7190	-.7652
70	-.5611	-.5401	-.4851	-.5236	-.6055	-.6939	-.7799
91	-.5876	-.5903	-.5792	-.5208	-.5710	-.6247	-.7574
92	-.6051	-.5956	-.5742	-.5627	-.5904	-.6105	-.7087
94	-.6109	-.5615	-.5558	-.5210	-.5601	-.6616	-.7944
95	-.5869	-.5688	-.5464	-.4995	-.5299	-.6258	-.7393
96	-.6064	-.5817	-.6013	-.5146	-.5522	-.5881	-.7162
97	-.6369	-.6050	-.5893	-.5362	-.5538	-.6312	-.7116
98	-.6101	-.6110	-.6165	-.5810	-.5783	-.6403	-.6686
100	-.5889	-.6011	-.5584	-.5327	-.5732	-.6770	-.7472
121	-.6633	-.6610	-.6483	-.5382	-.5219	-.6170	-.7070
122	-.6837	-.6583	-.6270	-.6039	-.5667	-.6369	-.6362
124	-.6654	-.6266	-.6070	-.5229	-.5274	-.5831	-.7308
125	-.6203	-.6223	-.5817	-.5524	-.5462	-.6186	-.6823
126	-.6334	-.6316	-.6149	-.5542	-.5559	-.6401	-.6771
127	-.6626	-.6381	-.6140	-.5841	-.5344	-.5738	-.7075
128	-.6464	-.6375	-.6194	-.5821	-.5352	-.6117	-.6700
130	-.6570	-.6374	-.6336	-.5574	-.5370	-.6153	-.7161
151	-.7152	-.7099	-.6951	-.5928	-.5729	-.5702	-.7032
152	-.7529	-.6981	-.6806	-.6323	-.5432	-.5316	-.6710
154	-.7054	-.6614	-.6505	-.5948	-.5598	-.5900	-.6[illegible]
155	-.7612	-.6694	-.6807	-.5520	-.5591	-.6076	-.6434
156	-.7182	-.6760	-.6675	-.6101	-.5424	-.4968	-.6529
157	-.6825	-.6792	-.6761	-.6091	-.5881	-.6256	-.6760
158	-.7153	-.7016	-.6895	-.6479	-.5891	-.6221	-.6856
160	-.7295	-.7039	-.6711	-.6131	-.6020	-.6303	-.6355
181	-.8027	-.7566	-.7417	-.6521	-.5503	-.5660	-.6567
182	-.7736	-.7603	-.7312	-.6184	-.5716	-.5991	-.6797
184	-.7839	-.7296	-.7156	-.6741	-.5664	-.5715	-.6017
185	-.7396	-.7175	-.7445	-.6576	-.5618	-.5636	-.6886
186	-.7346	-.7270	-.7277	-.6841	-.5986	-.5882	-.6494
187	-.7683	-.7739	-.7280	-.6845	-.6157	-.5539	-.6391
188	-.8005	-.7875	-.7546	-.6808	-.6221	-.6486	-.6576
190	-.7819	-.7707	-.7368	-.6779	-.5935	-.5880	-.6729
211	-.8874	-.8186	-.7568	-.6695	-.5660	-.5662	-.6389
212	-.8705	-.8224	-.8002	-.7093	-.5904	-.5570	-.6324
214	-.8205	-.8113	-.7777	-.6652	-.5639	-.5963	-.6514
215	-.8241	-.7898	-.7502	-.6686	-.5968	-.6380	-.6023
216	-.8475	-.8013	-.7998	-.7099	-.6416	-.5547	-.6201
217	-.8568	-.8347	-.7867	-.7265	-.6317	-.5592	-.7346
218	-.8582	-.8293	-.8036	-.7259	-.6228	-.5950	-.6669
220	-.8074	-.8023	-.7882	-.7172	-.6639	-.5793	-.6503
241	-.9991	-.8682	-.7902	-.6563	-.5769	-.5350	-.6475
242	-.9538	-.8617	-.7805	-.6684	-.5674	-.5675	-.5567
244	-.8885	-.8186	-.7928	-.6797	-.6096	-.5945	-.6186
245	-.8366	-.8330	-.7706	-.6606	-.6085	-.6002	-.6232
246	-.8686	-.8283	-.7920	-.6927	-.6075	-.5376	-.6405
247	-.9162	-.8354	-.8223	-.7516	-.5775	-.5577	-.6908
248	-.9093	-.8389	-.8010	-.6686	-.6553	-.6206	-.6731
250	-.8552	-.8187	-.8218	-.7411	-.6927	-.5953	-.6374

Table 4 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 20$ deg., $\beta = 0$ deg.

Alpha = 20.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
291	1.1296	1.0050	1.0271	.8723	.8393	.7988	.8148
292	.9290	.8394	.7418	.6755	.6004	.5905	.5633
294	.6742	.5600	.5509	.3764	.3243	.3115	.2844
295	.4933	.4476	.3698	.3263	.2161	.1943	.1683
296	.3048	.2854	.0912	.0586	.0217	.0205	-.0286
297	.1942	.0875	.0163	-.0223	-.0827	-.0895	-.1241
298	-.0863	-.1547	-.1021	-.1315	-.2044	-.2011	-.2202
300	-.3775	-.3393	-.3707	-.3459	-.3596	-.3534	-.3579
321	1.1528	1.0883	1.0318	.9826	.9191	.8764	.8540
322	1.0802	.8966	.9089	.7511	.6711	.6584	.6252
324	.8048	.6697	.6267	.4742	.3956	.3487	.3178
325	.5855	.5280	.4466	.3503	.2746	.2355	.2063
326	.2654	.3409	.2264	.1213	.0629	.0344	.0419
327	.2008	.1861	.0527	.0103	-.0503	-.0708	-.0777
328	-.0005	-.0680	-.1021	-.1165	-.1835	-.1943	-.2265
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	1.1216	1.0710	1.0194	.9459	.8918	.8769	.8368
352	1.0467	.9627	.8657	.7672	.6817	.6482	.6155
354	.8060	.7078	.6105	.5023	.4104	.3670	.3423
355	.6940	.5978	.5029	.4022	.3004	.2642	.2277
356	.4422	.3583	.2702	.1857	.1007	.0653	.0347
357	.2478	.1733	.1105	.0377	-.0292	-.0731	-.0942
358	.1858	.1765	.1223	.2868	.1284	.1590	.0970
360	-.3145	-.3219	-.3173	-.3095	-.3626	-.3906	-.4150
381	1.0944	1.0584	1.0250	.9600	.9003	.8727	.8108
382	1.0510	.9819	.8958	.8019	.6917	.6530	.6075
384	.8674	.7565	.6572	.5419	.4302	.3832	.3494
385	.7660	.6576	.5520	.4454	.3315	.2826	.2500
386	.5100	.4182	.3201	.2253	.1225	.0778	.0477
387	.3114	.2317	.1465	.0666	-.0197	-.0587	-.0763
388	.0893	.0281	-.0226	-.0856	-.1655	-.1996	-.2140
390	-.3107	-.3172	-.3275	-.3473	-.4091	-.4263	-.4507
411	1.0653	1.0541	1.0176	.9668	.8954	.8652	.8323
412	1.0747	1.0099	.9149	.8189	.6995	.6515	.6118
414	.9031	.7999	.6930	.5685	.4448	.4016	.3618
415	.8080	.7015	.5933	.4720	.3467	.3004	.2532
416	.5665	.4663	.3571	.2370	.1328	.0967	.0517
417	.3607	.2728	.1931	.0836	-.0031	-.0444	-.0781
418	.1369	.0713	.0043	-.0808	-.1555	-.1894	-.2157
420	-.2729	-.2932	-.2991	-.3632	-.4123	-.4392	-.4557
441	1.0328	1.0350	1.0096	.9589	.9025	.8774	.8311
442	1.0733	1.0045	.9242	.8161	.7036	.6638	.6014
444	.9285	.8318	.7087	.5893	.4637	.4082	.3467
445	.8304	.7310	.6061	.4946	.3594	.3036	.2452
446	.6051	.5037	.3909	.2747	.1546	.1015	.0522
447	.4002	.3196	.2139	.1168	-.0026	-.0461	-.0775
448	.1864	.1240	.0349	-.0491	-.1508	-.1794	-.2108
450	-.2644	-.2708	-.3210	-.3814	-.4599	-.4759	-.4866
471	1.0015	1.0224	1.0099	.9605	.8807	.8445	.8044
472	1.0618	1.0084	.9145	.8190	.6974	.6354	.5771
474	.9310	.8352	.7192	.5983	.4565	.3974	.3368
475	.8433	.7426	.6139	.4895	.3506	.2943	.2374
476	.6293	.5274	.4038	.2782	.1530	.0939	.0439
477	.4333	.3552	.2324	.1162	.0029	-.0435	-.0798
478	.2313	.1607	.0553	-.0406	-.1426	-.1713	-.1974
480	-.2049	-.2157	-.2922	-.3789	-.4485	-.4613	-.4596
501	.9351	.9512	.9212	.8721	.7837	.7431	.6808
502	.9441	.8822	.7974	.6940	.5688	.5155	.4522
504	.7778	.6935	.5870	.4669	.3362	.2839	.2241
505	.6939	.6102	.4938	.3712	.2425	.1987	.1353
506	.5179	.4238	.3119	.1914	.0768	.0349	-.0177
507	.3741	.2876	.1829	.0686	-.0344	-.0724	-.1054
508	.2336	.1479	.0551	-.0503	-.1370	-.1572	-.1791
510	-.2855	-.3899	-.3666	-.3620	-.3587	-.3725	-.3977

Table 4 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 20$ deg., $\beta = 0$ deg.

Alpha = 20.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
291	.8148	.7988	.7898	.7494	.7617	.7453	.7275
292	.5633	.5360	.5306	.4778	.4794	.4574	.4720
294	.2844	.2781	.2659	.2270	.2096	.2412	.1903
295	.1683	.1559	.1594	.1087	.1434	.0866	.1420
296	-.0286	-.0224	-.0306	-.0351	-.0775	-.0316	-.0613
297	-.1241	-.1290	-.1290	-.1524	-.1113	-.1278	-.1067
298	-.2202	-.2338	-.2494	-.2588	-.2155	-.1922	-.1988
300	-.3579	-.3536	-.3502	-.3445	-.3159	-.3212	-.2433
321	.8540	.8224	.8143	.7860	.7747	.7335	.6940
322	.6252	.5804	.5788	.5249	.4576	.4670	.4189
324	.3178	.2904	.2749	.2292	.2121	.1611	.1214
325	.2063	.1588	.1603	.1315	.1177	.0607	.0349
326	.0419	.0053	-.0126	-.0556	-.0754	-.1015	-.1075
327	-.0777	-.1143	-.1212	-.1661	-.1110	-.1396	-.1642
328	-.2265	-.2299	-.2384	-.2435	-.2384	-.2287	-.2310
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	.8368	.7366	.7924	.7517	.6980	.6197	.5539
352	.6155	.5111	.5499	.4911	.4341	.3648	.3042
354	.3423	.2605	.2656	.2121	.1652	.1132	.0634
355	.2277	.1645	.1715	.1180	.0703	.0330	-.0188
356	.0347	-.0101	-.0107	-.0491	-.0742	-.0941	-.1225
357	-.0942	-.1213	-.1237	-.1519	-.1597	-.1684	-.1621
358	.0970	-.0880	.2144	-.1849	.0668	.0539	-.1678
360	-.4150	-.4036	-.4311	-.4353	-.4194	-.3808	-.3493
381	.8108	.7415	.7878	.7216	.6450	.5714	.4139
382	.6075	.5197	.5312	.4566	.3819	.2929	.1642
384	.3494	.2733	.2589	.1900	.1309	.0642	-.0438
385	.2500	.1850	.1714	.1065	.0469	-.0125	-.1018
386	.0477	.0042	-.0104	-.0669	-.0947	-.1211	-.1801
387	-.0763	-.1126	-.1299	-.1714	-.1719	-.1768	-.2035
388	-.2140	-.2363	-.2559	-.2778	-.2608	-.2393	-.2430
390	-.4507	-.4688	-.4801	-.4976	-.4439	-.3715	-.3113
411	.8323	.7773	.7621	.6784	.5918	.4797	.2478
412	.6118	.5471	.5264	.4222	.3393	.2189	.0184
414	.3618	.3003	.2659	.1725	.1150	.0120	-.1246
415	.2532	.2049	.1657	.0862	.0395	-.0537	-.1731
416	.0517	.0087	-.0245	-.0748	-.0942	-.1521	-.2297
417	-.0781	-.1140	-.1405	-.1713	-.1587	-.1805	-.2106
418	-.2157	-.2501	-.2513	-.2803	-.2170	-.2020	-.1984
420	-.4557	-.4872	-.4807	-.4818	-.3514	-.2419	-.1255
441	.8311	.7775	.7488	.6582	.5569	.3673	.0712
442	.6014	.5422	.4978	.3980	.3006	.1228	-.1228
444	.3467	.2884	.2530	.1640	.0865	-.0387	-.2271
445	.2452	.1972	.1586	.0754	.0096	-.1034	-.2532
446	.0522	.0169	-.0203	-.0706	-.0988	-.1761	-.2767
447	-.0775	-.1117	-.1291	-.1541	-.1481	-.1753	-.2401
448	-.2108	-.2433	-.2374	-.2365	-.1713	-.1510	-.1888
450	-.4866	-.5108	-.4916	-.4364	-.2417	-.1093	-.0854
471	.8044	.7506	.7279	.6305	.4809	.1954	-.1721
472	.5771	.5105	.4797	.3736	.2321	-.0049	-.3017
474	.3368	.2697	.2413	.1494	.0420	-.1291	-.3290
475	.2374	.1785	.1450	.0662	-.0231	-.1838	-.3486
476	.0439	.0077	-.0161	-.0694	-.1186	-.2189	-.3425
477	-.0798	-.1085	-.1226	-.1342	-.1414	-.2056	-.2950
478	-.1974	-.2124	-.2263	-.1918	-.1437	-.1680	-.2109
480	-.4596	-.4584	-.4598	-.2903	-.1120	-.0640	-.1273
501	.6808	.6437	.6080	.5036	.2762	-.0626	-.5062
502	.4522	.3988	.3541	.2530	.0696	-.1646	-.4726
504	.2241	.1793	.1386	.0532	-.0689	-.2212	-.4408
505	.1353	.0939	.0568	-.0128	-.1194	-.2381	-.4236
506	-.0177	-.0514	-.0746	-.1099	-.1834	-.2583	-.3929
507	-.1054	-.1302	-.1433	-.1427	-.1839	-.2200	-.3291
508	-.1791	-.1970	-.1984	-.1657	-.1712	-.1888	-.2668
510	-.3977	-.3802	-.3871	-.3781	-.3609	-.3779	-.3291

Table 4 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 20$ deg., $\beta = 0$ deg.

Alpha = 50.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
31	-.5770	-.6965	-.7829	-.7574	-.6985	-.6549	-.4157
32	-.5951	-.6956	-.7507	-.7502	-.7034	-.6601	-.4243
34	-.6043	-.6641	-.7667	-.7821	-.7026	-.6461	-.3739
35	-.6040	-.6847	-.7936	-.7732	-.7072	-.6315	-.4237
36	-.6081	-.6832	-.7874	-.7453	-.7134	-.6494	-.3893
37	-.5907	-.6849	-.7491	-.7628	-.7358	-.6726	-.4414
38	-.5841	-.6690	-.7809	-.7817	-.7191	-.7009	-.4093
40	-.5827	-.6807	-.7705	-.7785	-.7529	-.6677	-.3918
61	-.6391	-.6825	-.7737	-.7325	-.6996	-.5943	-.3886
62	-.6450	-.7388	-.7733	-.7504	-.6974	-.6450	-.4245
64	-.6469	-.6986	-.7762	-.7518	-.7228	-.6489	-.3915
65	-.6230	-.7160	-.7806	-.7568	-.6947	-.6311	-.4197
66	-.6235	-.6712	-.7732	-.7629	-.7051	-.6055	-.4121
67	-.6369	-.6875	-.7603	-.7555	-.7131	-.6468	-.4117
68	-.6254	-.6937	-.7619	-.7623	-.7286	-.6711	-.4003
70	-.6205	-.7003	-.7977	-.7755	-.7312	-.6655	-.3781
91	-.7476	-.8023	-.8236	-.7947	-.7236	-.6468	-.4188
92	-.7657	-.8028	-.8393	-.7876	-.7439	-.6700	-.4398
94	-.7290	-.7959	-.8033	-.8127	-.7549	-.6747	-.4583
95	-.7418	-.8029	-.8429	-.7979	-.7387	-.6542	-.4780
96	-.7404	-.8015	-.8212	-.8026	-.7491	-.6758	-.4813
97	-.7188	-.7911	-.8188	-.7664	-.7544	-.6647	-.4592
98	-.7493	-.7932	-.8643	-.8189	-.7581	-.7078	-.4799
100	-.6850	-.7247	-.7673	-.7520	-.7057	-.6285	-.4113
121	-.8134	-.8305	-.8053	-.8028	-.7197	-.6329	-.4590
122	-.8288	-.8478	-.8213	-.7703	-.7384	-.6538	-.4785
124	-.8199	-.8215	-.8133	-.7891	-.7270	-.6458	-.4894
125	-.7947	-.8234	-.8371	-.7881	-.7294	-.6807	-.5098
126	-.7674	-.8195	-.8301	-.7901	-.7316	-.6352	-.4993
127	-.7952	-.8088	-.8124	-.8001	-.7359	-.6565	-.5215
128	-.7852	-.8239	-.8299	-.7992	-.7361	-.6807	-.4791
130	-.7741	-.8104	-.8117	-.7694	-.7428	-.6331	-.4950
151	-.8656	-.8723	-.8085	-.7651	-.7020	-.6498	-.4905
152	-.8559	-.8606	-.8408	-.7652	-.7109	-.6249	-.5209
154	-.8442	-.8742	-.8154	-.7739	-.7195	-.6397	-.5182
155	-.8520	-.8589	-.8236	-.7736	-.7130	-.6510	-.5100
156	-.8150	-.8296	-.8250	-.7869	-.7068	-.6654	-.5137
157	-.8114	-.8504	-.8325	-.7784	-.7074	-.6592	-.5166
158	-.7854	-.8312	-.8062	-.7869	-.7075	-.6506	-.5326
160	-.8085	-.8083	-.8086	-.7592	-.7193	-.6530	-.5261
181	-.8827	-.8687	-.8120	-.7642	-.6964	-.6286	-.5338
182	-.8800	-.8909	-.8249	-.7617	-.7041	-.6529	-.5390
184	-.8605	-.8741	-.8186	-.7899	-.7062	-.6229	-.5278
185	-.8534	-.8702	-.8190	-.7801	-.7069	-.6495	-.5360
186	-.8185	-.8692	-.8258	-.7586	-.7259	-.6588	-.5545
187	-.8084	-.8601	-.8216	-.7614	-.7186	-.6728	-.5454
188	-.8213	-.8449	-.8188	-.7668	-.7091	-.6551	-.5700
190	-.7912	-.8299	-.8295	-.7599	-.7152	-.6611	-.5114
211	-.8669	-.8822	-.8292	-.7516	-.6970	-.6276	-.5131
212	-.8526	-.8834	-.8592	-.7385	-.6958	-.6360	-.5081
214	-.8284	-.8418	-.8178	-.7662	-.7106	-.6417	-.5143
215	-.8231	-.8590	-.7913	-.7331	-.6861	-.6563	-.5259
216	-.8071	-.8528	-.8136	-.7468	-.7083	-.6848	-.5193
217	-.8033	-.8600	-.8109	-.7496	-.7137	-.6418	-.5144
218	-.7841	-.8493	-.8223	-.7563	-.7070	-.6569	-.5631
220	-.7874	-.8266	-.8371	-.7495	-.7053	-.6738	-.5603
241	-.8281	-.8441	-.8050	-.7157	-.6909	-.6335	-.4731
242	-.8213	-.8384	-.8002	-.7196	-.6902	-.6463	-.4782
244	-.8094	-.8258	-.8064	-.7305	-.6865	-.6354	-.5122
245	-.7835	-.8268	-.8020	-.7350	-.6863	-.6473	-.4831
246	-.7783	-.8284	-.8000	-.7281	-.6930	-.6559	-.5094
247	-.7755	-.8103	-.8055	-.7183	-.7074	-.6427	-.5113
248	-.7873	-.8171	-.8112	-.7270	-.6956	-.6610	-.5004
250	-.7745	-.8189	-.7941	-.7151	-.6920	-.6293	-.5241

Table 5 : Wing Pressure Coefficient Values
$\alpha = 50$ deg. , $\beta = 0$ deg.

Alpha = 50.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
31	-.4157	-.3753	-.3616	-.3584	-.3997	-.4352	-.5156
32	-.4243	-.3388	-.3597	-.3661	-.3950	-.4394	-.5271
34	-.3739	-.3507	-.3547	-.3906	-.3880	-.4475	-.5236
35	-.4237	-.3655	-.3474	-.3546	-.3909	-.4442	-.5656
36	-.3893	-.3797	-.3716	-.3893	-.4115	-.4856	-.5787
37	-.4414	-.3879	-.3835	-.4071	-.4231	-.4975	-.5949
38	-.4093	-.3899	-.3842	-.3867	-.4344	-.5047	-.6309
40	-.3918	-.3916	-.3970	-.3942	-.4347	-.5131	-.5996
61	-.3886	-.3548	-.3397	-.3425	-.3868	-.4374	-.5024
62	-.4245	-.3510	-.3589	-.3754	-.3890	-.4516	-.5333
64	-.3915	-.3565	-.3610	-.3364	-.3830	-.4578	-.5089
65	-.4197	-.3778	-.3545	-.3661	-.4179	-.4446	-.5206
66	-.4121	-.3809	-.3725	-.3790	-.4053	-.4653	-.5827
67	-.4117	-.3934	-.3832	-.3820	-.4279	-.5167	-.6139
68	-.4003	-.3799	-.3831	-.4106	-.4211	-.4850	-.6237
70	-.3781	-.3916	-.4009	-.4244	-.4568	-.5110	-.6169
91	-.4188	-.4157	-.4048	-.4361	-.4346	-.4877	-.5011
92	-.4398	-.4339	-.4224	-.4243	-.4503	-.4777	-.5514
94	-.4583	-.4273	-.4075	-.3894	-.4461	-.4911	-.5556
95	-.4780	-.4254	-.4178	-.4186	-.4567	-.4574	-.5413
96	-.4813	-.4353	-.4232	-.4378	-.4669	-.5549	-.5941
97	-.4592	-.4383	-.4249	-.4585	-.4620	-.5288	-.6171
98	-.4799	-.4443	-.4291	-.4450	-.4979	-.5439	-.6330
100	-.4113	-.4083	-.4083	-.3945	-.4412	-.5288	-.6081
121	-.4590	-.4429	-.4154	-.4028	-.4357	-.4942	-.4907
122	-.4785	-.4418	-.4094	-.4086	-.4579	-.4384	-.5212
124	-.4894	-.4521	-.4359	-.4271	-.4472	-.4788	-.5081
125	-.5098	-.4556	-.4265	-.4040	-.4565	-.4877	-.5128
126	-.4993	-.4609	-.4371	-.4320	-.4557	-.5128	-.5643
127	-.5215	-.4670	-.4432	-.4359	-.4863	-.5723	-.6257
128	-.4791	-.4802	-.4611	-.4440	-.4744	-.5293	-.6081
130	-.4950	-.4789	-.4636	-.4640	-.4797	-.5773	-.6353
151	-.4905	-.4658	-.4404	-.4044	-.4373	-.4772	-.4698
152	-.5209	-.4591	-.4338	-.4076	-.4434	-.4714	-.4750
154	-.5182	-.4701	-.4492	-.3927	-.4416	-.4854	-.5118
155	-.5100	-.4825	-.4475	-.4214	-.4255	-.4652	-.5097
156	-.5137	-.4859	-.4451	-.4055	-.4510	-.5069	-.5560
157	-.5166	-.4906	-.4630	-.4246	-.4564	-.5289	-.6131
158	-.5326	-.5042	-.4697	-.4275	-.4703	-.4974	-.5861
160	-.5261	-.5053	-.4878	-.4537	-.4894	-.5454	-.6055
181	-.5338	-.4841	-.4586	-.4018	-.4315	-.4389	-.4637
182	-.5390	-.4913	-.4488	-.4047	-.4278	-.4567	-.5029
184	-.5278	-.4913	-.4527	-.4060	-.4333	-.4509	-.4746
185	-.5360	-.4921	-.4553	-.4131	-.4499	-.5123	-.5066
186	-.5545	-.5059	-.4574	-.4304	-.4280	-.4961	-.5529
187	-.5454	-.5078	-.4862	-.4293	-.4618	-.5048	-.5942
188	-.5700	-.5258	-.4921	-.4327	-.4671	-.5443	-.5905
190	-.5114	-.5261	-.4801	-.4392	-.4889	-.5345	-.6136
211	-.5131	-.4818	-.4531	-.3752	-.4220	-.4577	-.4589
212	-.5081	-.4835	-.4564	-.4088	-.4586	-.4830	-.4694
214	-.5143	-.4863	-.4681	-.3909	-.4164	-.4605	-.5256
215	-.5259	-.4943	-.4679	-.3955	-.4267	-.4918	-.5215
216	-.5193	-.5042	-.4819	-.4272	-.4381	-.4767	-.5220
217	-.5144	-.5080	-.4828	-.4280	-.4675	-.5007	-.5761
218	-.5631	-.5249	-.4942	-.4203	-.4492	-.5197	-.5593
220	-.5603	-.5315	-.4996	-.4239	-.4728	-.5100	-.6072
241	-.4731	-.4694	-.4456	-.4132	-.4395	-.4776	-.4777
242	-.4782	-.4645	-.4363	-.4034	-.4191	-.4542	-.4782
244	-.5122	-.4630	-.4577	-.4092	-.4231	-.4754	-.5052
245	-.4831	-.4763	-.4557	-.4249	-.4376	-.4599	-.5015
246	-.5094	-.4716	-.4695	-.4252	-.4620	-.5346	-.5169
247	-.5113	-.4896	-.4705	-.4170	-.4321	-.5113	-.5543
248	-.5004	-.4957	-.4846	-.4153	-.4877	-.4819	-.5490
250	-.5241	-.5091	-.4800	-.4194	-.4537	-.4969	-.5553

Table 5 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 0$ deg.

Alpha = 50.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
291	.9823	.9072	.8866	.8729	.8588	.8545	.8882
292	1.2520	1.1624	1.0706	1.0584	1.0216	1.0031	1.0657
294	1.2771	1.1401	1.1097	1.0252	.9763	.9613	1.0140
295	1.2692	1.1208	1.0310	.9646	.9141	.8947	.9490
296	1.0905	.9504	.8559	.8049	.7423	.7183	.7559
297	.9167	.7813	.7096	.6477	.5915	.5486	.6011
298	.6854	.5807	.5061	.4323	.3880	.3605	.3869
300	.2544	.1601	.1191	.0770	.0233	-.0108	-.0131
321	.8088	.7882	.8016	.8037	.7938	.7988	.8371
322	1.1799	1.0928	1.0435	1.0316	.9965	.9907	1.0379
324	1.2972	1.1838	1.1103	1.0470	.9924	.9804	1.0035
325	1.2997	1.1343	1.0637	1.0174	.9432	.9415	.9568
326	1.1618	1.0068	.9063	.8625	.7869	.7591	.7931
327	.9715	.8431	.7595	.6628	.6147	.5759	.5996
328	.7695	.6055	.5322	.0000	.3978	.3708	.3913
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	.5897	.5517	.5547	.5914	.6028	.6203	.6845
352	.9689	.8680	.8246	.8174	.7981	.8014	.8595
354	1.0918	.9707	.9033	.8608	.8088	.7919	.8372
355	1.0972	.9675	.8899	.8291	.7642	.7560	.7886
356	1.0123	.8666	.7434	.6992	.6137	.6036	.6220
357	.8433	.7110	.6120	.5402	.4679	.4402	.4627
358	.7044	.4554	.5783	.3652	.0304	.0763	.3694
360	.1840	.0837	.0390	-.0090	-.0774	-.1032	-.1284
381	.5155	.4970	.5158	.5487	.5836	.5951	.6480
382	.9004	.8296	.8056	.8098	.7855	.7907	.8523
384	1.0484	.9675	.8971	.8521	.8035	.7879	.8312
385	1.0785	.9612	.8659	.8281	.7624	.7534	.7948
386	1.0121	.8698	.7797	.7073	.6227	.6035	.6268
387	.8555	.7316	.6321	.5534	.4730	.4474	.4698
388	.6548	.5461	.4516	.3722	.2840	.2590	.2700
390	.1853	.0994	.0320	-.0207	-.1005	-.1303	-.1477
411	.4362	.4471	.4737	.5281	.5656	.5907	.6501
412	.8325	.7904	.7758	.7789	.7576	.7823	.8294
414	1.0223	.9457	.8833	.8358	.7888	.7804	.8242
415	1.0582	.9543	.8772	.8185	.7549	.7482	.7757
416	.9811	.8761	.7820	.7015	.6241	.5971	.6107
417	.8936	.7474	.6447	.5661	.4691	.4424	.4598
418	.6903	.5650	.4715	.4026	.2844	.2623	.2745
420	.2352	.1194	.0456	.0016	-.0973	-.1227	-.1282
441	.3516	.3890	.4315	.5022	.5393	.5771	.6521
442	.8060	.7464	.7454	.7433	.7474	.7604	.8059
444	.9926	.9050	.8547	.8235	.7720	.7649	.8003
445	1.0208	.9197	.8505	.8035	.7293	.7182	.7635
446	.9936	.8668	.7764	.7039	.6057	.5939	.6050
447	.8953	.7592	.6445	.5718	.4620	.4372	.4521
448	.7334	.6655	.4928	.4011	.2935	.2589	.2742
450	.2534	.2161	.0604	-.0135	-.1101	-.1479	-.1398
471	.3114	.4081	.4015	.4783	.5298	.5704	.6575
472	.7211	.7682	.7032	.7169	.7174	.7314	.7978
474	.9418	.9267	.8185	.7778	.7327	.7272	.7619
475	.9630	.9381	.8138	.7635	.6928	.6789	.7143
476	.9636	.8991	.7442	.6747	.5732	.5386	.5740
477	.8728	.7932	.6342	.5470	.4384	.4072	.4221
478	.7256	.6383	.4831	.3984	.2780	.2490	.2530
480	.2820	.2091	.0824	.0166	-.1062	-.1481	-.1214
501	.2419	.3322	.3582	.4404	.4940	.5265	.6234
502	.6185	.6094	.5981	.6214	.6112	.6145	.6840
504	.7693	.7130	.6463	.6102	.5641	.5436	.5876
505	.7697	.7236	.6235	.5835	.5147	.4877	.5220
506	.7566	.6743	.5685	.4956	.4092	.3771	.3981
507	.7059	.6005	.4951	.4170	.3210	.2782	.3050
508	.6238	.5319	.3952	.3279	.2191	.1779	.1959
510	.2524	.1796	.1100	.0747	.0240	-.0248	-.0443

Table 5 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 0$ deg.

Alpha = 50.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
291	.8882	.8971	.9013	.9085	.9472	1.0065	1.0917
292	1.0657	1.0809	1.0520	1.0773	1.0765	1.1426	1.1943
294	1.0140	1.0105	.9747	.9880	.9701	.9805	1.0464
295	.9490	.9391	.9160	.9116	.9123	.9201	.9647
296	.7559	.7478	.7445	.7254	.7074	.6970	.7316
297	.6011	.5631	.5378	.5602	.5072	.5231	.5540
298	.3869	.3573	.3636	.3310	.3249	.3186	.3551
300	-.0131	-.0133	-.0343	-.0641	-.1012	-.0690	-.0443
321	.8371	.8460	.8646	.9215	.9458	1.0019	1.1109
322	1.0379	1.0508	1.0545	1.0835	1.0866	1.1146	1.1780
324	1.0035	1.0268	1.0077	1.0078	.9982	1.0092	1.0170
325	.9568	.9532	.9474	.9319	.9181	.9157	.9478
326	.7931	.7786	.7540	.7269	.6952	.6912	.6949
327	.5996	.5779	.5520	.5327	.4824	.5055	.5163
328	.3913	.3512	.3275	.3073	.2473	.2644	.2674
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	.6845	.6715	.6985	.7316	.7808	.8398	.9251
352	.8595	.8515	.8453	.8662	.8686	.9025	.9539
354	.8372	.8254	.8107	.7947	.7780	.7794	.8043
355	.7886	.7672	.7561	.7244	.6987	.6930	.7095
356	.6220	.5971	.5814	.5342	.5135	.4817	.4839
357	.4627	.4302	.4145	.3585	.3137	.2949	.3063
358	.3694	.2725	.1936	.3344	.3091	.1136	.1601
360	-.1284	-.1568	-.1677	-.2184	-.2599	-.2919	-.2865
381	.6480	.6749	.7102	.7490	.7932	.8606	.9503
382	.8523	.8408	.8574	.8629	.8636	.8891	.9328
384	.8312	.8174	.7992	.7760	.7474	.7369	.7516
385	.7948	.7706	.7465	.7188	.6681	.6558	.6526
386	.6268	.5936	.5628	.5306	.4639	.4340	.4127
387	.4698	.4307	.4041	.3516	.2803	.2503	.2276
388	.2700	.2282	.2039	.1298	.0787	.0349	.0178
390	-.1477	-.1747	-.2002	-.2571	-.3191	-.3686	-.3701
411	.6501	.6924	.7193	.7602	.8214	.8878	.9473
412	.8294	.8333	.8344	.8417	.8551	.8661	.8926
414	.8242	.7942	.7925	.7489	.7245	.6932	.6703
415	.7757	.7330	.7202	.6795	.6381	.6004	.5795
416	.6107	.5709	.5565	.5014	.4277	.3717	.3452
417	.4598	.4260	.3872	.3148	.2550	.1805	.1612
418	.2745	.2237	.1977	.1285	.0373	-.0205	-.0400
420	-.1282	-.1695	-.1964	-.2711	-.3510	-.4161	-.4209
441	.6521	.6721	.7158	.7694	.8225	.8786	.9349
442	.8059	.8093	.8142	.8186	.8139	.8196	.8259
444	.8003	.7723	.7615	.7126	.6639	.6257	.6027
445	.7635	.7203	.7035	.6360	.5834	.5274	.4914
446	.6050	.5584	.5304	.4433	.3819	.3146	.2701
447	.4521	.3973	.3617	.2765	.2052	.1238	.0884
448	.2742	.2274	.1861	.0990	.0281	-.0613	-.0915
450	-.1398	-.1852	-.2166	-.3048	-.3892	-.4682	-.4939
471	.6575	.6784	.7196	.7717	.8213	.8462	.8953
472	.7978	.7935	.7960	.7904	.7701	.7536	.7408
474	.7619	.7240	.7140	.6691	.6042	.5417	.4937
475	.7143	.6789	.6389	.5851	.5197	.4353	.3840
476	.5740	.5242	.4833	.4066	.3114	.2256	.1677
477	.4221	.3598	.3265	.2471	.1409	.0492	-.0036
478	.2530	.2024	.1680	.0716	-.0256	-.1193	-.1583
480	-.1214	-.1652	-.2090	-.2918	-.3938	-.4885	-.5188
501	.6234	.6422	.6738	.7191	.7253	.7308	.7341
502	.6840	.6590	.6629	.6364	.5995	.5500	.5139
504	.5876	.5518	.5361	.4693	.3918	.3098	.2593
505	.5220	.4815	.4578	.3880	.3026	.2201	.1572
506	.3981	.3524	.3169	.2343	.1387	.0418	-.0187
507	.3050	.2495	.2027	.1256	.0174	-.0692	-.1299
508	.1959	.1436	.1054	.0131	-.0868	-.1851	-.2389
510	-.0443	-.0636	-.0559	-.1253	-.1387	-.1601	-.1502

Table 5 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 0$ deg.

Alpha = 80.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
31	-.4919	-.4456	-.4417	-.4028	-.3776	-.3680	-.3451
32	-.5082	-.4596	-.4559	-.4082	-.3776	-.3786	-.3348
34	-.5087	-.4673	-.4623	-.4168	-.4227	-.3731	-.3610
35	-.4991	-.4627	-.4539	-.4190	-.3868	-.3666	-.3569
36	-.4807	-.4474	-.4219	-.4079	-.3713	-.3661	-.3298
37	-.4412	-.4105	-.4243	-.3669	-.3776	-.3488	-.3100
38	-.4370	-.4115	-.3987	-.3886	-.3485	-.3348	-.3242
40	-.4242	-.3733	-.3629	-.3341	-.3176	-.3210	-.3060
61	-.4934	-.4617	-.4679	-.3988	-.3988	-.3454	-.3484
62	-.4780	-.4631	-.4633	-.4649	-.3751	-.3746	-.3480
64	-.4826	-.4597	-.4402	-.4253	-.3870	-.3732	-.3736
65	-.4880	-.4615	-.4482	-.4046	-.3892	-.3803	-.3382
66	-.4701	-.4408	-.4127	-.4063	-.3805	-.3737	-.3373
67	-.4435	-.4262	-.4270	-.4038	-.3717	-.3581	-.3323
68	-.4361	-.4139	-.3963	-.3759	-.3583	-.3569	-.3223
70	-.4242	-.3880	-.3984	-.3606	-.3353	-.3282	-.3084
91	-.5463	-.5075	-.5621	-.5046	-.4349	-.4488	-.4421
92	-.5426	-.5010	-.5095	-.4690	-.4357	-.4737	-.4485
94	-.5670	-.5302	-.5271	-.4852	-.4343	-.4507	-.4158
95	-.5218	-.4997	-.5483	-.4688	-.4425	-.4263	-.4585
96	-.5148	-.5337	-.5047	-.4857	-.4400	-.4484	-.4061
97	-.4992	-.4773	-.4939	-.4752	-.4130	-.4414	-.3952
98	-.5003	-.5012	-.4708	-.4554	-.3926	-.4014	-.3994
100	-.4444	-.3937	-.4010	-.3718	-.3592	-.3406	-.3338
121	-.5669	-.5201	-.5515	-.4991	-.4430	-.4695	-.4145
122	-.5481	-.5358	-.5255	-.5263	-.4480	-.4451	-.4189
124	-.5399	-.5382	-.5333	-.5013	-.4756	-.4323	-.4603
125	-.5310	-.5516	-.5547	-.5067	-.4780	-.4616	-.4192
126	-.5277	-.5018	-.5029	-.4822	-.4632	-.4469	-.4198
127	-.5186	-.4918	-.5092	-.5100	-.4504	-.4169	-.4257
128	-.5037	-.5005	-.5286	-.5376	-.4306	-.4349	-.4403
130	-.4920	-.4655	-.5334	-.4708	-.4241	-.4185	-.4429
151	-.5682	-.5410	-.5479	-.4957	-.4614	-.4613	-.4325
152	-.5761	-.5266	-.5508	-.5262	-.4683	-.4573	-.4357
154	-.5596	-.5474	-.5209	-.5869	-.4545	-.4621	-.4468
155	-.5529	-.5190	-.4920	-.5106	-.4552	-.4947	-.4533
156	-.5247	-.5176	-.5188	-.4870	-.4833	-.4367	-.4353
157	-.5126	-.5368	-.5323	-.5193	-.4700	-.4251	-.4605
158	-.5286	-.4981	-.4917	-.5320	-.4735	-.4512	-.4508
160	-.4664	-.4894	-.4996	-.5524	-.4567	-.4280	-.4573
181	-.5801	-.5309	-.6294	-.5665	-.4723	-.4572	-.4175
182	-.5559	-.5651	-.5581	-.5472	-.4940	-.4419	-.4947
184	-.5300	-.5354	-.5604	-.5797	-.5114	-.4634	-.4695
185	-.5578	-.5390	-.5637	-.5042	-.5011	-.4604	-.4232
186	-.5135	-.5381	-.5744	-.5455	-.4732	-.4389	-.4426
187	-.4918	-.5231	-.5685	-.5529	-.5062	-.4411	-.4425
188	-.4731	-.5025	-.5655	-.4975	-.4426	-.4484	-.4255
190	-.4863	-.4881	-.5375	-.5191	-.4860	-.4398	-.4546
211	-.5680	-.5480	-.5752	-.5111	-.4521	-.4725	-.4135
212	-.5468	-.5275	-.5707	-.4955	-.4576	-.4298	-.4229
214	-.5806	-.5202	-.5302	-.5041	-.4541	-.4389	-.4509
215	-.5458	-.5301	-.6076	-.5295	-.4930	-.4464	-.4219
216	-.5276	-.5416	-.5411	-.4840	-.4528	-.4499	-.4337
217	-.5188	-.5061	-.5363	-.4986	-.4830	-.4584	-.4303
218	-.5160	-.4918	-.5499	-.5433	-.4733	-.4452	-.4240
220	-.5007	-.4777	-.5058	-.4883	-.4939	-.4259	-.4245
241	-.5288	-.5240	-.5496	-.5097	-.4477	-.4403	-.4507
242	-.5482	-.5071	-.5416	-.4962	-.4768	-.4034	-.4082
244	-.5556	-.4990	-.4964	-.4764	-.4495	-.4296	-.4258
245	-.5353	-.5146	-.5343	-.4920	-.4645	-.4549	-.4335
246	-.5338	-.4997	-.4862	-.4909	-.4404	-.4284	-.4259
247	-.4930	-.4952	-.5316	-.5100	-.4400	-.4334	-.4336
248	-.4912	-.5097	-.5102	-.4525	-.4456	-.4349	-.4241
250	-.5143	-.4963	-.5007	-.4914	-.4320	-.4320	-.4586

Table 6 : Wing Pressure Coefficient Values
$\alpha = 80$ deg., $\beta = 0$ deg.

Alpha = 80.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
31	-.3451	-.3153	-.3083	-.2990	-.2896	-.3065	-.3475
32	-.3348	-.3201	-.3323	-.2919	-.3042	-.3144	-.3369
34	-.3610	-.3121	-.3456	-.2869	-.3296	-.3319	-.3287
35	-.3569	-.3468	-.3074	-.2769	-.3165	-.3384	-.3479
36	-.3298	-.3138	-.3118	-.2909	-.3313	-.3503	-.3671
37	-.3100	-.3101	-.2967	-.2859	-.3183	-.3574	-.3467
38	-.3242	-.2966	-.3195	-.2883	-.3453	-.3480	-.3422
40	-.3060	-.2894	-.2971	-.2711	-.3060	-.3599	-.3559
61	-.3484	-.3127	-.3258	-.2963	-.2712	-.3433	-.3257
62	-.3480	-.3175	-.3146	-.2737	-.3106	-.3371	-.3553
64	-.3736	-.3138	-.3257	-.2877	-.3194	-.3651	-.3711
65	-.3382	-.3262	-.3040	-.3129	-.3248	-.3669	-.3789
66	-.3373	-.3216	-.3180	-.2929	-.3413	-.3669	-.3605
67	-.3323	-.3115	-.3112	-.2992	-.3296	-.3436	-.3621
68	-.3223	-.3062	-.3129	-.3064	-.3260	-.3985	-.3710
70	-.3084	-.2961	-.2844	-.3008	-.3171	-.3554	-.3702
91	-.4421	-.3898	-.3892	-.3464	-.3606	-.4027	-.3897
92	-.4485	-.3896	-.3765	-.3729	-.3505	-.4040	-.4136
94	-.4158	-.4121	-.3638	-.3465	-.4138	-.4375	-.4593
95	-.4585	-.4102	-.3668	-.3768	-.3782	-.4577	-.4357
96	-.4061	-.3880	-.3727	-.3429	-.3645	-.4175	-.4336
97	-.3952	-.3859	-.3935	-.3955	-.4044	-.4587	-.4545
98	-.3994	-.3975	-.3850	-.3656	-.3769	-.4181	-.4697
100	-.3338	-.3072	-.3290	-.2847	-.3329	-.3842	-.4606
121	-.4145	-.4032	-.3588	-.3734	-.3573	-.4271	-.4069
122	-.4189	-.4114	-.3906	-.3350	-.3472	-.4533	-.4280
124	-.4603	-.4121	-.4302	-.3658	-.3819	-.4684	-.4630
125	-.4192	-.4097	-.4191	-.3756	-.3786	-.4403	-.4588
126	-.4198	-.4187	-.3762	-.3479	-.3689	-.4679	-.4805
127	-.4257	-.4253	-.4352	-.3895	-.3716	-.4838	-.5021
128	-.4403	-.4160	-.4127	-.3618	-.4101	-.4408	-.5125
130	-.4429	-.3992	-.3916	-.3564	-.3879	-.5007	-.5601
151	-.4325	-.4088	-.3595	-.3622	-.4031	-.4037	-.4411
152	-.4357	-.3965	-.4417	-.3908	-.3773	-.4769	-.4764
154	-.4468	-.4258	-.4208	-.3600	-.4092	-.4332	-.4898
155	-.4533	-.4399	-.4402	-.3675	-.3818	-.4391	-.5229
156	-.4353	-.4183	-.3906	-.3893	-.3901	-.4480	-.4672
157	-.4605	-.4343	-.4276	-.3852	-.3632	-.4939	-.5243
158	-.4508	-.4377	-.4070	-.4377	-.4117	-.4414	-.5466
160	-.4573	-.4253	-.4140	-.3948	-.3968	-.5197	-.5533
181	-.4175	-.4193	-.4157	-.3484	-.3454	-.4639	-.4634
182	-.4947	-.4034	-.4029	-.3804	-.3878	-.4302	-.4849
184	-.4695	-.4109	-.4209	-.3659	-.3805	-.4490	-.4746
185	-.4232	-.4301	-.3911	-.3919	-.3881	-.5023	-.4932
186	-.4426	-.4165	-.3970	-.3836	-.4066	-.4851	-.5021
187	-.4425	-.4487	-.4317	-.4085	-.3870	-.4813	-.5153
188	-.4255	-.3887	-.4145	-.3755	-.4392	-.4773	-.5396
190	-.4546	-.4397	-.4095	-.3513	-.4338	-.5157	-.5360
211	-.4135	-.4276	-.3823	-.3427	-.3854	-.4623	-.4608
212	-.4229	-.3926	-.4154	-.3766	-.3685	-.4194	-.4791
214	-.4509	-.4291	-.3854	-.3818	-.4063	-.4589	-.5095
215	-.4219	-.4197	-.3790	-.3963	-.3892	-.4804	-.4981
216	-.4337	-.4335	-.4074	-.3699	-.3797	-.4855	-.4979
217	-.4303	-.4177	-.4337	-.3920	-.4170	-.5126	-.4782
218	-.4240	-.4117	-.4519	-.3832	-.4255	-.4761	-.5127
220	-.4245	-.4282	-.4079	-.3977	-.3977	-.5324	-.5380
241	-.4507	-.3919	-.3725	-.3715	-.3895	-.4652	-.4620
242	-.4082	-.3954	-.3949	-.3629	-.4190	-.4829	-.4582
244	-.4258	-.4131	-.4015	-.3679	-.3728	-.4880	-.4748
245	-.4335	-.3951	-.3917	-.3782	-.4012	-.4340	-.5203
246	-.4259	-.4094	-.4083	-.3637	-.3666	-.4577	-.4879
247	-.4336	-.4132	-.4197	-.3684	-.4309	-.4827	-.4964
248	-.4241	-.4195	-.4167	-.3854	-.3992	-.4939	-.5089
250	-.4586	-.4135	-.4114	-.3906	-.3701	-.4780	-.5192

Table 6 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 80$ deg., $\beta = 0$ deg.

Alpha = 80.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
291	.1724	.1422	.1221	.1213	.1266	.1475	.1650
292	.6846	.6392	.5984	.5943	.5817	.5967	.6038
294	1.0946	1.0356	.9530	.9298	.9338	.9354	.9384
295	1.2040	1.1220	1.0397	1.0008	.9939	1.0066	1.0184
296	1.3403	1.2175	1.1302	1.1071	1.0714	1.0759	1.0839
297	1.3047	1.2165	1.0967	1.0734	1.0397	1.0402	1.0435
298	1.2254	1.1090	1.0165	.9572	.9404	.9356	.9376
300	.8356	.7416	.6591	.6211	.6021	.5883	.5641
321	-.0096	-.0235	.0003	.0241	.0377	.0388	.0706
322	.5214	.4890	.4833	.4820	.5037	.5208	.5378
324	1.0040	.9295	.8955	.8917	.8924	.8938	.9173
325	1.1295	1.0340	.9781	.9820	.9702	.9699	.9776
326	1.3002	1.1729	1.1064	1.0713	1.0660	1.0548	1.0700
327	1.2850	1.1695	1.0881	1.0651	1.0355	1.0253	1.0272
328	1.2027	.0000	1.0193	.9748	.9342	.9295	.9083
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	-.1896	-.1559	-.1305	-.1118	-.1081	-.0695	-.0342
352	.2827	.2742	.2984	.3035	.3375	.3687	.3966
354	.7280	.7142	.6736	.6654	.6833	.6923	.7087
355	.8352	.8013	.7463	.7548	.7615	.7639	.7695
356	1.0079	.9571	.8986	.8708	.8469	.8443	.8554
357	1.0596	.9766	.8984	.8517	.8329	.8207	.8152
358	.9966	.9200	.8338	.8910	.8128	.9060	.8322
360	.6711	.5810	.5068	.4494	.4061	.3875	.3807
381	-.2590	-.2185	-.1728	-.1467	-.1325	-.1023	-.0620
382	.2051	.2358	.2389	.2693	.3225	.3435	.3807
384	.6782	.6545	.6255	.6276	.6654	.6797	.7036
385	.8034	.7648	.7293	.7221	.7348	.7485	.7625
386	.9668	.9296	.8493	.8359	.8332	.8368	.8523
387	1.0527	.9561	.8758	.8365	.8242	.8058	.8184
388	.9914	.8948	.8248	.7656	.7247	.7181	.7172
390	.6782	.5660	.5039	.4382	.3826	.3608	.3396
411	-.3167	-.2611	-.2084	-.2074	-.1362	-.1150	-.0555
412	.1489	.1694	.2228	.2535	.2996	.3345	.3735
414	.6174	.6014	.5838	.6079	.6338	.6623	.6828
415	.7460	.7220	.7019	.6956	.7267	.7430	.7541
416	.9493	.8759	.8469	.8167	.8165	.8184	.8222
417	1.0135	.9618	.8795	.8323	.8089	.7857	.7799
418	.9856	.9460	.8287	.7560	.7162	.6995	.6802
420	.7027	.6574	.5144	.4366	.3668	.3332	.3256
441	-.3766	-.3044	-.2427	-.2425	-.1666	-.1122	-.0569
442	.1047	.1597	.1707	.2639	.2943	.3280	.3815
444	.5572	.6302	.5822	.5818	.6155	.6470	.6589
445	.6883	.7111	.6736	.6730	.6911	.7210	.7272
446	.9067	.9184	.8034	.7872	.7833	.7965	.7918
447	.9377	.9691	.8550	.7991	.7805	.7782	.7665
448	.9722	.9483	.7797	.7471	.6982	.6930	.6701
450	.7254	.6437	.5132	.4210	.3468	.3396	.3031
471	-.3848	-.3153	-.2592	-.2219	-.1343	-.0911	-.0313
472	.0727	.1494	.1633	.2024	.2796	.3209	.3644
474	.4988	.5550	.5037	.5439	.5787	.6028	.6222
475	.6121	.5854	.6079	.6198	.6425	.6661	.6896
476	.8044	.7639	.7233	.7321	.7264	.7387	.7284
477	.8981	.8404	.7727	.7551	.7232	.7181	.7129
478	.9033	.8191	.7517	.6910	.6615	.6430	.6297
480	.6937	.5887	.4966	.4154	.3373	.3164	.2728
501	-.3995	-.3316	-.2764	-.2015	-.1317	-.0823	-.0351
502	.0231	.0604	.1283	.1983	.2337	.2885	.2987
504	.3435	.3431	.3831	.3982	.4415	.4701	.4816
505	.4203	.4201	.4380	.4600	.4824	.5065	.5098
506	.5813	.5717	.5412	.5507	.5307	.5479	.5348
507	.6825	.6144	.6059	.5609	.5467	.5396	.5352
508	.7358	.6605	.5989	.5493	.5130	.5090	.4891
510	.8412	.7429	.6511	.6048	.5610	.5523	.5421

Table 6 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 80$ deg. , $\beta = 0$ deg.

Alpha = 80.0000 Beta = .0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
291	.1650	.1813	.1983	.2306	.2972	.3726	.4429
292	.6038	.6379	.6334	.6974	.7606	.8335	.9367
294	.9384	.9661	.9774	1.0004	1.0668	1.1173	1.2362
295	1.0184	1.0361	1.0315	1.0613	1.1310	1.1929	1.3143
296	1.0839	1.0885	1.0862	1.1039	1.1746	1.2292	1.3132
297	1.0435	1.0569	1.0457	1.0604	1.1088	1.1497	1.2568
298	.9376	.9406	.9248	.9537	.9925	1.0045	1.1141
300	.5641	.5711	.5718	.5653	.6078	.6287	.6923
321	.0706	.0886	.1067	.1602	.2414	.3313	.4397
322	.5378	.5787	.5829	.6477	.7223	.8121	.9255
324	.9173	.9412	.9489	.9745	1.0605	1.1131	1.2533
325	.9776	1.0173	1.0073	1.0543	1.1097	1.1846	1.2994
326	1.0700	1.0627	1.0831	1.0891	1.1620	1.2163	1.2950
327	1.0272	1.0367	1.0455	1.0574	1.0821	1.1429	1.2171
328	.9083	.9188	.9074	.9098	.9423	.9757	1.0375
330	.0000	.0000	.0000	.0000	.0000	.0000	.0000
351	-.0342	-.0179	-.0056	.0649	.1369	.2341	.3566
352	.3966	.4165	.4251	.4968	.5732	.6579	.7841
354	.7087	.7376	.7296	.7917	.8473	.9202	1.0290
355	.7695	.8078	.8035	.8359	.8922	.9548	1.0698
356	.8554	.8635	.8589	.8957	.9062	.9554	1.0534
357	.8152	.8348	.8065	.8232	.8370	.8922	.9673
358	.8322	-.2296	.7738	.9163	.8601	.9132	.9768
360	.3807	.3674	.3465	.3479	.3414	.3470	.3973
381	-.0620	-.0224	-.0028	.0812	.1660	.2736	.4072
382	.3807	.4050	.4300	.5050	.5790	.6960	.8333
384	.7036	.7278	.7373	.8002	.8504	.9247	1.0412
385	.7625	.7900	.7893	.8527	.8821	.9575	1.0666
386	.8523	.8375	.8319	.8743	.8972	.9389	1.0236
387	.8184	.8026	.7944	.8166	.8127	.8516	.9130
388	.7172	.6924	.6884	.6741	.6773	.7006	.7601
390	.3396	.3145	.2967	.2844	.2744	.2598	.3091
411	-.0555	-.0351	-.0012	.1046	.2127	.3273	.4781
412	.3735	.3985	.4293	.5197	.6100	.7063	.8574
414	.6828	.7044	.7188	.7924	.8500	.9156	1.0499
415	.7541	.7664	.7798	.8311	.8907	.9485	1.0681
416	.8222	.8298	.8185	.8376	.8680	.9071	1.0063
417	.7799	.7899	.7770	.7755	.7924	.8074	.8815
418	.6802	.6834	.6520	.6485	.6446	.6491	.6917
420	.3256	.3019	.2783	.2489	.2353	.2362	.2555
441	-.0569	-.0357	.0137	.1168	.2388	.3788	.5405
442	.3815	.4046	.4482	.5428	.6494	.7577	.9104
444	.6589	.6854	.7095	.7717	.8525	.9113	1.0279
445	.7272	.7449	.7588	.8124	.8707	.9184	1.0215
446	.7918	.7917	.7887	.8183	.8454	.8773	.9387
447	.7665	.7627	.7432	.7402	.7602	.7797	.8182
448	.6701	.6571	.6349	.6183	.6199	.6278	.6443
450	.3031	.2712	.2486	.2072	.1908	.1762	.1674
471	-.0313	.0013	.0516	.1698	.3016	.4500	.6200
472	.3644	.4074	.4444	.5377	.6481	.7618	.9095
474	.6222	.6543	.6696	.7308	.8019	.8750	.9813
475	.6896	.7115	.7330	.7661	.8302	.8777	.9589
476	.7284	.7413	.7402	.7545	.7796	.8131	.8584
477	.7129	.7060	.6956	.6821	.6867	.7009	.7326
478	.6297	.6074	.5892	.5621	.5582	.5284	.5485
480	.2728	.2537	.2297	.1917	.1531	.1325	.1280
501	-.0351	.0183	.0652	.1863	.3233	.4730	.6243
502	.2987	.3558	.3887	.4798	.5784	.6616	.7761
504	.4816	.5078	.5300	.5808	.6176	.6668	.7430
505	.5098	.5306	.5326	.5731	.6068	.6411	.6915
506	.5348	.5452	.5419	.5586	.5415	.5593	.6042
507	.5352	.5256	.5170	.4937	.5035	.4965	.5162
508	.4891	.4785	.4571	.4306	.4139	.4051	.4043
510	.5421	.5383	.5293	.5078	.5406	.5578	.6016

Table 6 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 80$ deg., $\beta = 0$ deg.

Alpha = 5.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
91	.0246	-.2533	-.5677	-.9030	-1.3022	-1.4864	-1.6830
92	-.3048	-.5419	-.7896	-1.0353	-1.3570	-1.4853	-1.6218
94	-.4072	-.5815	-.7363	-.8452	-1.0558	-1.1480	-1.2769
95	-.4212	-.5438	-.6450	-.7561	-.9715	-1.0866	-1.2362
96	-.3350	-.4184	-.4638	-.5761	-.5582	-.5929	-.6325
97	-.2825	-.3118	-.3765	-.3241	-.3965	-.4178	-.4237
98	-.1868	-.2287	-.1861	-.1870	-.2417	-.2505	-.2487
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	.2059	-.0791	-.4144	-.8021	-1.2668	-1.4891	-1.7294
122	-.1913	-.4177	-.6961	-.9974	-1.3263	-1.4826	-1.6311
124	-.3302	-.4919	-.6533	-.8259	-1.0206	-1.1349	-1.2668
125	-.3359	-.4620	-.5903	-.7231	-.9380	-1.0729	-1.2408
126	-.3091	-.3745	-.4621	-.5402	-.5356	-.5672	-.6178
127	-.2394	-.2925	-.3267	-.3278	-.3796	-.3967	-.4088
128	-.1714	-.2065	-.1836	-.1814	-.2336	-.2381	-.2357
130	-.0947	-.0768	-.0284	-.0432	-.0721	-.0572	-.0444
151	.3831	.1106	-.2505	-.6960	-1.2004	-1.4525	-1.7201
152	-.0170	-.2784	-.5383	-.8929	-1.2621	-1.4327	-1.6039
154	-.2441	-.3958	-.5542	-.7689	-.9787	-1.0894	-1.2645
155	-.2674	-.3625	-.5324	-.6770	-.8928	-1.0412	-1.2501
156	-.2510	-.3230	-.4042	-.5078	-.5347	-.5284	-.5899
157	-.2202	-.2482	-.2927	-.3490	-.3631	-.3798	-.3985
158	-.1700	-.1688	-.2206	-.1818	-.2240	-.2243	-.2288
160	-.0960	-.1000	-.0617	-.0555	-.0807	-.0612	-.0488
181	.5216	.2536	-.1100	-.5583	-1.0800	-1.3487	-1.6465
182	.0912	-.1411	-.4583	-.8040	-1.1848	-1.3654	-1.5431
184	-.1577	-.3270	-.5288	-.7091	-.9172	-1.0384	-1.2101
185	-.2004	-.3151	-.4701	-.6441	-.8266	-.9744	-1.1961
186	-.2193	-.2808	-.3462	-.4603	-.5692	-.4847	-.5562
187	-.2260	-.2288	-.2764	-.3535	-.3278	-.3549	-.3816
188	-.1816	-.1702	-.1922	-.1790	-.2070	-.2159	-.2241
190	-.1756	-.0961	-.0683	-.0551	-.0798	-.0573	-.0596
211	.6109	.3965	.0397	-.4144	-.9400	-1.2227	-1.5103
212	.1973	-.0214	-.3257	-.6811	-1.0741	-1.2590	-1.4523
214	-.1217	-.2567	-.4273	-.6579	-.8425	-.9503	-1.1266
215	-.1637	-.2649	-.4353	-.5751	-.7508	-.8891	-1.1008
216	-.2130	-.2820	-.3338	-.4203	-.5836	-.4574	-.5027
217	-.2264	-.2137	-.2827	-.3141	-.3015	-.3265	-.3520
218	-.1733	-.1541	-.1790	-.1889	-.1864	-.2003	-.2090
220	-.1525	-.0837	-.1043	-.0668	-.0724	-.0659	-.0669
241	.6512	.4229	.1168	-.2745	-.7386	-.9944	-1.2548
242	.2137	.0051	-.2846	-.5841	-.9132	-1.0868	-1.2690
244	-.1015	-.2428	-.3878	-.5616	-.7189	-.8221	-.9492
245	-.1380	-.2493	-.3560	-.4788	-.6310	-.7376	-.8681
246	.0000	-.2559	-.3051	-.3562	-.4638	-.4808	-.4935
247	-.2201	-.2015	-.2308	-.2678	-.3060	-.3326	-.3771
248	-.1940	-.1809	-.1906	-.1764	-.1964	-.2168	-.2550
250	-.2115	-.1484	-.1319	-.0886	-.0947	-.1013	-.1259

Table 7 : Wing Pressure Coefficient Values
$\alpha = 5$ deg., $\beta = 10$ deg.

Alpha = 5.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
91	-1.6830	-1.8735	-2.0628	-2.5080	-.5799	-.5883	-.6770
92	-1.6218	-1.7313	-1.8634	-2.1605	-.5727	-.6046	-.7045
94	-1.2769	-1.3985	-1.5621	-1.9656	-.5638	-.5833	-.6838
95	-1.2362	-1.3848	-1.5196	-1.1842	-.5599	-.5637	-.6754
96	-.6325	-.6645	-.6945	-.7628	-.5346	-.5673	-.6673
97	-.4237	-.4296	-.4422	-.4678	-.5511	-.5841	-.6868
98	-.2487	-.2426	-.2374	-.2382	-.5633	-.6032	-.7132
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-1.7294	-1.9538	-2.1900	-2.6759	-.5674	-.5803	-.6965
122	-1.6311	-1.7629	-1.8938	-2.2612	-.5735	-.5774	-.6869
124	-1.2668	-1.4448	-1.6520	-1.9940	-.5757	-.5812	-.6518
125	-1.2408	-.6608	-1.3996	-1.1401	-.5575	-.5597	-.6561
126	-.6178	-.4226	-.7000	-.7542	-.5526	-.5713	-.6563
127	-.4088	-.2353	-.4431	-.4529	-.5711	-.5974	-.6923
128	-.2357	-.0308	-.2433	-.2341	-.5960	-.6143	-.7032
130	-.0444	-1.9648	-.0326	-.0549	-.5557	-.5892	-.6982
151	-1.7201	-1.9798	-2.2517	-2.7859	-.6342	-.6190	-.6990
152	-1.6039	-1.7496	-1.9245	-2.4267	-.6477	-.6413	-.6799
154	-1.2645	-1.4671	-1.7312	-1.7959	-.6382	-.6061	-.6594
155	-1.2501	-1.4590	-1.3544	-1.1731	-.6241	-.6021	-.6603
156	-.5899	-.6337	-.6782	-.7563	-.6236	-.6308	-.6664
157	-.3985	-.4131	-.4316	-.4494	-.6372	-.6450	-.6830
158	-.2288	-.2282	-.2365	-.2304	-.6571	-.6616	-.6864
160	-.0488	-.0365	-.0381	-.0588	-.6394	-.6391	-.6820
181	-1.6465	-1.9185	-2.2194	-2.9006	-.7547	-.6915	-.6654
182	-1.5431	-1.6961	-1.8823	-2.5641	-.7755	-.6789	-.6707
184	-1.2101	-1.4407	-1.7293	-1.5301	-.7229	-.6635	-.6505
185	-1.1961	-1.4472	-1.4379	-1.2198	-.7136	-.6654	-.6544
186	-.5562	-.5996	-.6554	-.7679	-.7112	-.6803	-.6616
187	-.3816	-.3968	-.4172	-.4636	-.7496	-.7018	-.6962
188	-.2241	-.2279	-.2351	-.2570	-.7883	-.7251	-.7146
190	-.0596	-.0527	-.0516	-.0859	-.7402	-.7161	-.7082
211	-1.5103	-1.8275	-2.1475	-2.9365	-.9110	-.7499	-.6720
212	-1.4523	-1.6250	-1.8286	-2.6583	-.9242	-.7598	-.6824
214	-1.1266	-1.3759	-1.6913	-1.4517	-.8634	-.7356	-.6754
215	-1.1008	-1.3707	-1.3919	-1.2528	-.8571	-.7398	-.6855
216	-.5027	-.5645	-.6346	-.7952	-.8863	-.7728	-.6875
217	-.3520	-.3892	-.4186	-.5113	-.9111	-.7883	-.6979
218	-.2090	-.2277	-.2478	-.3139	-.9236	-.8188	-.7075
220	-.0669	-.0634	-.0718	-.1148	-.8063	-.8099	-.7492
241	-1.2548	-1.5805	-1.9014	-2.6400	-1.0313	-.7792	-.6710
242	-1.2690	-1.4811	-1.7023	-2.2955	-.9561	-.7630	-.6774
244	-.9492	-1.1406	-1.3797	-1.4469	-.8973	-.7551	-.6732
245	-.8681	-1.0532	-1.1832	-1.1527	-.9006	-.7687	-.6752
246	-.4935	-.5620	-.6684	-.8532	-.9342	-.8011	-.7041
247	-.3771	-.4333	-.5199	-.6733	-.9681	-.8265	-.7033
248	-.2550	-.3019	-.3687	-.5295	-.9432	-.8269	-.7391
250	-.1259	-.1694	-.2213	-.3642	-.8130	-.8283	-.7696

Table 7 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg., $\beta = 10$ deg.

Alpha = 5.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
351	.7211	.6697	.6109	.6205	.4971	.4434	.3607
352	.4762	.4169	.3614	.3785	.2666	.2111	.1520
354	.2133	.1600	.1313	.1462	.0650	.0180	-.0254
355	.1198	.0762	.0399	.0685	.0012	-.0310	-.0703
356	-.0358	-.0557	-.0610	-.0140	-.0497	-.0749	-.0897
357	-.1153	-.1212	-.1087	-.0297	-.0422	-.0639	-.0735
358	-.1856	-.1849	-.3157	-.1889	-.5446	-.2585	-.0984
360	-.3022	-.2388	-.1400	.0408	.0573	.0532	.0371
381	.7738	.6969	.6328	.6817	.5521	.4700	.3696
382	.5363	.4535	.3804	.4320	.3038	.2329	.1549
384	.2738	.2032	.1580	.2056	.1095	.0557	-.0043
385	.1745	.1062	.0813	.1311	.0522	.0046	-.0390
386	.0003	-.0310	-.0642	.0384	-.0230	-.0441	-.0857
387	-.0961	-.1116	-.1182	-.0008	-.0289	-.0407	-.0644
388	-.2093	-.2042	-.1809	-.0040	-.0168	-.0156	-.0244
390	-.4373	-.3587	-.2662	.0509	.0604	.0675	.0512
411	.7870	.7014	.6244	.7199	.5608	.4722	.3669
412	.5842	.4868	.4068	.4782	.3300	.2526	.1480
414	.3296	.2361	.1713	.2621	.1374	.0792	.0193
415	.2306	.1504	.0880	.1806	.0714	.0278	-.0262
416	.0225	-.0329	-.0520	.0589	-.0132	-.0397	-.0697
417	-.0987	-.1190	-.1227	.0214	-.0212	-.0362	-.0622
418	-.2396	-.2330	-.2023	.0058	-.0065	-.0158	-.0199
420	-.4848	-.4429	-.3572	.0351	.0551	.0621	.0518
441	.8037	.7228	.6390	.7444	.5802	.4826	.3443
442	.6168	.5150	.4095	.5066	.3429	.2564	.1561
444	.3388	.2777	.1933	.2884	.1574	.0967	.0179
445	.2700	.1794	.1069	.2089	.0921	.0416	-.0186
446	.0585	-.0010	-.0330	.0835	.0080	-.0212	-.0646
447	-.0802	-.1044	-.1207	.0296	-.0087	-.0290	-.0510
448	-.2121	-.2082	-.2011	.0053	-.0040	-.0155	-.0182
450	-.5001	-.4592	-.4025	.0031	.0427	.0469	.0685
471	.7923	.7226	.6332	.7417	.5718	.4599	.3238
472	.6140	.5134	.4053	.5116	.3421	.2474	.1245
474	.3768	.2892	.1983	.2927	.1550	.0912	.0056
475	.2748	.1866	.1182	.2091	.0908	.0317	-.0351
476	.0551	.0079	-.0368	.0838	.0035	-.0332	-.0739
477	-.0707	-.0899	-.1318	.0315	-.0222	-.0402	-.0524
478	-.1872	-.2061	-.2058	.0060	-.0133	-.0231	-.0324
480	-.4663	-.4192	-.3665	-.0135	.0252	.0381	.0422
501	.6852	.5906	.5138	.6375	.4455	.3209	.1783
502	.4616	.4036	.2830	.3821	.2191	.1242	.0350
504	.2500	.1500	.0920	.1617	.0548	-.0047	-.0707
505	.0000	.0851	.0223	.0882	-.0020	-.0478	-.0965
506	-.0070	-.0575	-.0995	-.0173	-.0696	-.0975	-.1190
507	-.1120	-.1449	-.1689	-.0459	-.0749	-.0892	-.1062
508	-.1910	-.2072	-.2131	-.0482	-.0514	-.0605	-.0528
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 7 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg., $\beta = 10$ deg.

Alpha = 5.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
351	.3607	.2764	.2076	-.0021	-.2946	-.5492	-.7850
352	.1520	.0694	.0039	-.1602	-.3906	-.5616	-.7451
354	-.0254	-.0717	-.1342	-.2361	-.4031	-.5213	-.6343
355	-.0703	-.1174	-.1652	-.2657	-.4118	-.5046	-.5808
356	-.0897	-.1295	-.1650	-.2375	-.3220	-.3997	-.4619
357	-.0735	-.0965	-.1203	-.1690	-.2557	-.3039	-.3466
358	-.0984	-.5248	.3650	.1267	-.1817	-.3158	-.3975
360	.0371	.0279	-.0024	-.0314	-.0878	-.0106	-.0162
381	.3696	.2741	.1562	-.1100	-.4613	-.7893	-1.1417
382	.1549	.0606	-.0254	-.2233	-.4954	-.7474	-.9944
384	-.0043	-.0682	-.1257	-.2658	-.4530	-.6112	-.7638
385	-.0390	-.1040	-.1553	-.2762	-.4331	-.5625	-.7063
386	-.0857	-.1191	-.1580	-.2352	-.3552	-.4422	-.5322
387	-.0644	-.0876	-.1185	-.1711	-.2642	-.3363	-.3755
388	-.0244	-.0308	-.0486	-.1181	-.1866	-.2263	-.2438
390	.0512	.0332	.0087	-.0621	-.0623	-.0214	-.0454
411	.3669	.2415	.1096	-.2306	-.6587	-1.0911	-1.5376
412	.1480	.0528	-.0520	-.3124	-.6300	-.9222	-1.2368
414	.0193	-.0597	-.1239	-.3071	-.5076	-.7080	-.9343
415	-.0262	-.0947	-.1544	-.3004	-.4626	-.6383	-.7985
416	-.0697	-.1170	-.1550	-.2609	-.3945	-.5001	-.5813
417	-.0622	-.0830	-.1060	-.1777	-.2963	-.3557	-.4014
418	-.0199	-.0315	-.0455	-.1200	-.2060	-.2112	-.2692
420	.0518	.0330	.0178	-.0814	-.0185	-.0245	-.0755
441	.3443	.2126	.0599	-.3285	-.8466	-1.3562	-1.8163
442	.1561	.0342	-.0863	-.3723	-.7315	-1.0885	-1.5946
444	.0179	-.0678	-.1418	-.3375	-.5624	-.8147	-.8722
445	-.0186	-.1055	-.1641	-.3344	-.5318	-.7097	-.8166
446	-.0646	-.1191	-.1555	-.2777	-.4166	-.5071	-.6258
447	-.0510	-.0836	-.1083	-.2067	-.3137	-.3323	-.4162
448	-.0182	-.0377	-.0492	-.1364	-.2031	-.2307	-.2900
450	.0685	.0312	.0158	-.0859	-.0368	-.0700	-.1211
471	.3238	.1544	-.0085	-.4483	-1.0095	-1.5395	-2.0059
472	.1245	.0045	-.1113	-.4268	-.8121	-1.2870	-2.0453
474	.0056	-.0875	-.1545	-.3668	-.6046	-.7912	-1.0139
475	-.0351	-.1035	-.1651	-.3455	-.5481	-.6646	-.8519
476	-.0739	-.1275	-.1671	-.2949	-.4361	-.5097	-.6118
477	-.0524	-.0931	-.1139	-.2153	-.3035	-.3711	-.4375
478	-.0324	-.0411	-.0558	-.1435	-.1759	-.2567	-.2965
480	.0422	.0239	.0046	-.0596	-.0216	-.0992	-.1397
501	.1783	.0087	-.1630	-.5959	-1.0703	-1.4354	-1.6344
502	.0350	-.0870	-.1992	-.4695	-.8061	-1.4116	-1.6748
504	-.0707	-.1259	-.2067	-.3603	-.6075	-.6256	-1.2343
505	-.0965	-.1485	-.2011	-.3279	-.4810	-.5515	-.9771
506	-.1190	-.1538	-.1896	-.2632	-.3465	-.4464	-.5842
507	-.1062	-.1214	-.1390	-.1887	-.2437	-.3162	-.4212
508	-.0528	-.0793	-.0817	-.1529	-.1664	-.2417	-.3113
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 7 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg. , $\beta = 10$ deg.

Alpha = 50.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
91	-.8014	-.7550	-.7158	-.6574	-.6203	-.5850	-.5494
92	-.7922	-.7437	-.7161	-.6596	-.6194	-.5884	-.5585
94	-.7674	-.7429	-.6969	-.6683	-.6049	-.5909	-.5691
95	-.7675	-.7476	-.7061	-.6649	-.6028	-.5944	-.5680
96	-.7400	-.7372	-.7162	-.6790	-.6007	-.6023	-.5729
97	-.7587	-.7454	-.7163	-.6886	-.6064	-.6050	-.5800
98	-.7492	-.7432	-.7291	-.6803	-.6095	-.6027	-.5785
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-.8396	-.8005	-.7473	-.7056	-.6315	-.6149	-.5801
122	-.8320	-.7924	-.7495	-.7113	-.6526	-.6150	-.5805
124	-.8121	-.7712	-.7349	-.7043	-.6379	-.6198	-.5869
125	-.8274	-.7805	-.7258	-.7003	-.6393	-.6161	-.5899
126	-.7824	-.7831	-.7349	-.7062	-.6320	-.6191	-.5839
127	-.7762	-.7703	-.7327	-.6764	-.6292	-.6134	-.5969
128	-.7728	-.7804	-.7244	-.6771	-.6445	-.6212	-.5978
130	-.7849	-.7429	-.7131	-.6874	-.6438	-.6257	-.6060
151	-.8922	-.8330	-.7667	-.7167	-.6641	-.6329	-.5986
152	-.8837	-.8368	-.7552	-.7115	-.6754	-.6340	-.5875
154	-.8660	-.8159	-.7507	-.7208	-.6606	-.6287	-.6015
155	-.8543	-.8285	-.7547	-.7160	-.6689	-.6275	-.6086
156	-.8385	-.8057	-.7431	-.7253	-.6634	-.6324	-.6054
157	-.8209	-.8066	-.7346	-.7174	-.6627	-.6294	-.6059
158	-.8226	-.7762	-.7501	-.7212	-.6630	-.6366	-.6154
160	-.8106	-.7771	-.7390	-.7149	-.6669	-.6364	-.6094
181	-.9176	-.8427	-.7688	-.7279	-.6642	-.6327	-.5843
182	-.9046	-.8296	-.7681	-.7239	-.6653	-.6352	-.5948
184	-.8839	-.8072	-.7613	-.7141	-.6606	-.6273	-.5894
185	-.8614	-.8154	-.7765	-.7053	-.6611	-.6339	-.6002
186	-.8257	-.7983	-.7565	-.6901	-.6659	-.6358	-.6130
187	-.8311	-.8017	-.7539	-.6956	-.6556	-.6523	-.6152
188	-.8168	-.7788	-.7408	-.7055	-.6772	-.6535	-.6120
190	-.8215	-.7826	-.7442	-.7106	-.6782	-.6465	-.6177
211	-.8811	-.8346	-.7770	-.7038	-.6498	-.6066	-.5826
212	-.8896	-.8233	-.7927	-.7091	-.6451	-.6033	-.5763
214	-.8453	-.8181	-.7601	-.6962	-.6436	-.5984	-.5769
215	-.8774	-.8156	-.7579	-.7065	-.6376	-.5959	-.5810
216	-.8355	-.8031	-.7465	-.6966	-.6416	-.6107	-.5843
217	-.8448	-.7959	-.7479	-.7060	-.6492	-.6262	-.5877
218	-.8451	-.7902	-.7571	-.7049	-.6460	-.6255	-.5939
220	-.8352	-.7992	-.7502	-.7108	-.6553	-.6210	-.5975
241	-.8301	-.8000	-.7428	-.6861	-.6192	-.5753	-.5531
242	-.8291	-.7853	-.7378	-.6955	-.6184	-.5840	-.5518
244	-.7946	-.7763	-.7497	-.6955	-.6107	-.5784	-.5466
245	-.8061	-.7989	-.7325	-.6895	-.6006	-.5662	-.5357
246	-.7868	-.8096	-.7501	-.6892	-.6102	-.5864	-.5574
247	-.7951	-.7895	-.7374	-.6876	-.6075	-.6019	-.5573
248	-.7888	-.7928	-.7362	-.6950	-.6135	-.6102	-.5639
250	-.8042	-.7700	-.7513	-.6840	-.6169	-.6136	-.5711

Table 8 : Wing Pressure Coefficient Values
$\alpha = 50$ deg. , $\beta = 10$ deg.

Alpha = 50.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
91	-.5494	-.5455	-.4975	-.4303	-.3737	-.4079	-.4533
92	-.5585	-.5427	-.5019	-.4373	-.3870	-.4093	-.4555
94	-.5691	-.5410	-.5116	-.4476	-.3917	-.4087	-.4894
95	-.5680	-.5504	-.5094	-.4502	-.3961	-.3952	-.4773
96	-.5729	-.5548	-.5105	-.4587	-.3968	-.4061	-.5194
97	-.5800	-.5599	-.5252	-.4684	-.4094	-.4219	-.5524
98	-.5785	-.5668	-.5205	-.4690	-.4040	-.4411	-.5597
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-.5801	-.5627	-.5206	-.4575	-.3859	-.3886	-.4440
122	-.5805	-.5632	-.5148	-.4480	-.3835	-.4034	-.4634
124	-.5869	-.5655	-.5262	-.4690	-.3865	-.3976	-.4550
125	-.5899	-.5680	-.5336	-.4646	-.3989	-.4083	-.4614
126	-.5839	-.5727	-.5389	-.4864	-.3964	-.4059	-.4943
127	-.5969	-.5784	-.5451	-.4841	-.4071	-.4251	-.5287
128	-.5978	-.5832	-.5466	-.4981	-.4117	-.4414	-.5539
130	-.6060	-.5835	-.5460	-.5007	-.4182	-.4675	-.5642
151	-.5986	-.5702	-.5354	-.4713	-.3950	-.4030	-.4458
152	-.5875	-.5694	-.5392	-.4669	-.3943	-.4153	-.4546
154	-.6015	-.5763	-.5381	-.4849	-.4074	-.4119	-.4528
155	-.6086	-.5794	-.5468	-.4818	-.4033	-.4173	-.4576
156	-.6054	-.5878	-.5575	-.4935	-.4217	-.4184	-.4865
157	-.6059	-.6036	-.5666	-.5024	-.4134	-.4179	-.5049
158	-.6154	-.5990	-.5766	-.5182	-.4263	-.4516	-.5294
160	-.6094	-.5960	-.5797	-.5224	-.4317	-.4431	-.5621
181	-.5843	-.5711	-.5392	-.4644	-.3933	-.4053	-.4579
182	-.5948	-.5676	-.5399	-.4610	-.4012	-.4130	-.4648
184	-.5894	-.5740	-.5441	-.4750	-.3929	-.4113	-.4632
185	-.6002	-.5758	-.5449	-.4840	-.4019	-.4138	-.4684
186	-.6130	-.5878	-.5618	-.4962	-.4104	-.4169	-.4793
187	-.6152	-.5933	-.5649	-.5241	-.4154	-.4237	-.5084
188	-.6120	-.6027	-.5672	-.5262	-.4286	-.4381	-.5258
190	-.6177	-.6063	-.5805	-.5267	-.4296	-.4546	-.5311
211	-.5826	-.5537	-.5264	-.4602	-.3894	-.4087	-.4526
212	-.5763	-.5612	-.5266	-.4576	-.3992	-.4127	-.4599
214	-.5769	-.5695	-.5347	-.4649	-.4174	-.4123	-.4690
215	-.5810	-.5601	-.5417	-.4694	-.4140	-.4223	-.4710
216	-.5843	-.5671	-.5510	-.4778	-.4106	-.4204	-.4858
217	-.5877	-.5786	-.5504	-.4968	-.4263	-.4327	-.4944
218	-.5939	-.5827	-.5626	-.5058	-.4425	-.4303	-.5018
220	-.5975	-.6022	-.5737	-.5270	-.4419	-.4443	-.5131
241	-.5531	-.5345	-.5049	-.4452	-.4003	-.3974	-.4530
242	-.5518	-.5311	-.5089	-.4408	-.4003	-.4158	-.4564
244	-.5466	-.5366	-.5119	-.4435	-.3981	-.4094	-.4547
245	-.5357	-.5446	-.5111	-.4450	-.4006	-.4204	-.4547
246	-.5574	-.5394	-.5178	-.4581	-.4126	-.4145	-.4676
247	-.5573	-.5560	-.5256	-.4670	-.4069	-.4128	-.4766
248	-.5639	-.5575	-.5298	-.4816	-.4111	-.4351	-.4859
250	-.5711	-.5631	-.5363	-.5000	-.4244	-.4438	-.4981

Table 8 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 10$ deg.

Alpha = 50.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
351	.4214	.5594	.5650	.5868	.5944	.6025	.6219
352	.9254	.8878	.8519	.8157	.8049	.8005	.8164
354	1.0560	1.0066	.9280	.8749	.8174	.8099	.8039
355	1.0505	.9925	.8988	.8440	.7831	.7722	.7601
356	.9642	.9071	.7827	.7189	.6443	.6155	.6034
357	.8202	.7363	.6467	.5606	.4840	.4577	.4396
358	.8058	.6778	.5334	.4580	.4676	.4733	.3426
360	.1454	.1280	.0287	-.0237	-.0965	-.1164	-.1310
381	.4712	.5036	.5335	.5558	.5652	.6045	.6386
382	.8563	.8513	.8236	.8137	.7956	.8058	.8075
384	1.0590	.9996	.9108	.8797	.8231	.8072	.8003
385	1.0720	.9865	.9225	.8369	.7832	.7675	.7512
386	.9763	.8997	.7931	.7194	.6435	.6196	.6025
387	.8328	.7475	.6456	.5583	.4865	.4610	.4373
388	.6397	.5611	.4567	.3808	.2974	.2668	.2471
390	.1516	.1074	.0307	-.0353	-.1136	-.1313	-.1488
411	.4076	.4665	.4890	.5553	.5776	.6080	.6415
412	.8016	.8181	.8049	.8022	.7818	.7915	.8072
414	1.0195	.9435	.9017	.8641	.7960	.7897	.7808
415	1.0394	.9663	.8883	.8285	.7697	.7552	.7357
416	.9798	.8897	.7923	.7249	.6321	.6027	.5807
417	.8365	.7578	.6608	.5644	.4899	.4525	.4199
418	.6516	.5832	.4595	.3860	.2939	.2634	.2399
420	.1796	.1301	.0521	-.0088	-.0924	-.1218	-.1494
441	.3464	.4184	.4553	.5068	.5499	.5910	.6326
442	.7634	.7744	.7732	.7705	.7534	.7631	.7760
444	.9742	.9491	.8721	.8269	.7756	.7627	.7558
445	.9885	.9348	.8706	.8106	.7510	.7212	.7104
446	.9544	.8811	.7784	.7087	.6209	.5854	.5649
447	.8591	.7588	.6656	.5669	.4798	.4420	.4119
448	.6887	.6013	.4874	.4071	.3139	.2726	.2322
450	.1998	.1386	.0497	-.0164	-.0819	-.1187	-.1458
471	.3007	.3665	.4292	.4955	.5663	.5747	.6242
472	.6901	.7179	.7153	.7197	.7591	.7298	.7346
474	.9058	.8727	.8228	.7850	.7606	.7093	.7055
475	.9378	.8864	.8244	.7565	.7193	.6706	.6570
476	.9160	.8308	.7448	.6581	.5917	.5454	.5213
477	.7991	.7298	.6197	.5475	.4536	.4077	.3681
478	.6579	.5880	.4663	.3860	.2979	.2492	.2178
480	.2266	.1723	.0827	.0159	-.0600	-.1001	-.1187
501	.2279	.2932	.3670	.4250	.4830	.5062	.5293
502	.5606	.5967	.5804	.5743	.5878	.5858	.5850
504	.6872	.6716	.6291	.5948	.5550	.5180	.4956
505	.6887	.6592	.6003	.5433	.5022	.4693	.4416
506	.6844	.6164	.5354	.4700	.3971	.3675	.3214
507	.6241	.5421	.4812	.3825	.3073	.2682	.2265
508	.5251	.4518	.3776	.2856	.2103	.1723	.1257
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 8 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 10$ deg.

Alpha = 50.0000 Beta = 10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
351	.6219	.6532	.6893	.7301	.7709	.8400	.9014
352	.8164	.8186	.8330	.8437	.8624	.8884	.9197
354	.8039	.7865	.7841	.7778	.7574	.7731	.7594
355	.7601	.7444	.7340	.7236	.6804	.6942	.6839
356	.6034	.5824	.5651	.5279	.4923	.4837	.4761
357	.4396	.4189	.4042	.3611	.3295	.3116	.3112
358	.3426	.3065	.1459	.2727	.2991	.2870	.3572
360	-.1310	-.1478	-.1617	-.1904	-.2392	-.2352	-.2282
381	.6386	.6600	.6911	.7566	.7875	.8725	.9044
382	.8075	.8132	.8228	.8496	.8464	.8787	.8927
384	.8003	.7903	.7866	.7644	.7523	.7258	.7265
385	.7512	.7362	.7318	.7022	.6573	.6487	.6322
386	.6025	.5795	.5574	.5186	.4617	.4414	.4240
387	.4373	.4143	.3909	.3459	.2998	.2677	.2364
388	.2471	.2234	.2018	.1491	.0929	.0746	.0499
390	-.1488	-.1738	-.1947	-.2252	-.2887	-.3126	-.3225
411	.6415	.6666	.7058	.7681	.8035	.8868	.9119
412	.8072	.8090	.8111	.8324	.8401	.8511	.8478
414	.7808	.7689	.7564	.7280	.6907	.6895	.6688
415	.7357	.7181	.7059	.6671	.6209	.5884	.5562
416	.5807	.5565	.5343	.4866	.4203	.3788	.3435
417	.4199	.4041	.3708	.3228	.2532	.2104	.1741
418	.2399	.2149	.1837	.1389	.0536	.0139	-.0154
420	-.1494	-.1615	-.1844	-.2164	-.3007	-.3354	-.3674
441	.6326	.6600	.6967	.7574	.8069	.8726	.8964
442	.7760	.7840	.7979	.8026	.7996	.7851	.7914
444	.7558	.7355	.7264	.6912	.6374	.6049	.5693
445	.7104	.6871	.6724	.6237	.5531	.5159	.4761
446	.5649	.5269	.5039	.4464	.3638	.3079	.2485
447	.4119	.3735	.3576	.2838	.1990	.1404	.0919
448	.2322	.2070	.1793	.1101	.0283	-.0216	-.0757
450	-.1458	-.1707	-.1994	-.2504	-.3509	-.4090	-.4380
471	.6242	.6474	.6829	.7522	.7851	.8228	.8401
472	.7346	.7472	.7428	.7569	.7331	.7158	.6860
474	.7055	.6870	.6671	.6249	.5608	.5148	.4543
475	.6570	.6271	.6063	.5478	.4641	.4150	.3439
476	.5213	.4858	.4543	.3803	.2886	.2256	.1369
477	.3681	.3380	.3063	.2296	.1268	.0580	-.0008
478	.2178	.1887	.1489	.0734	-.0239	-.0943	-.1450
480	-.1187	-.1530	-.1842	-.2417	-.3550	-.4285	-.4547
501	.5293	.5760	.6020	.6436	.6416	.6654	.6312
502	.5850	.5932	.5871	.5537	.5084	.4701	.4130
504	.4956	.4844	.4670	.3843	.3056	.2412	.1624
505	.4416	.4205	.4008	.3140	.2184	.1448	.0722
506	.3214	.3028	.2677	.1730	.0599	-.0085	-.0766
507	.2265	.2031	.1675	.0747	-.0320	-.1020	-.1660
508	.1257	.1022	.0702	-.0069	-.1159	-.1861	-.2522
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 8 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = 10$ deg.

Alpha = 5.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
91	-.2371	-.4694	-.7614	-1.1193	-1.4521	-1.5022	-1.7837
92	-.6307	-.8033	-1.0599	-1.2965	-1.5641	-1.5467	-1.7858
94	-.6622	-.8532	-.9538	-1.1268	-1.2539	-1.2297	-1.3671
95	-.6814	-.7614	-.8754	-1.0217	-1.1374	-1.1489	-1.3242
96	-.5237	-.6307	-.6810	-.7785	-.7455	-.6894	-.7854
97	-.4522	-.5105	-.5335	-.4771	-.5374	-.5063	-.5688
98	-.3565	-.3253	-.3098	-.3269	-.3663	-.3395	-.3825
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	.0600	-.2161	-.5288	-.9580	-1.3602	-1.4462	-1.7685
122	-.4106	-.6212	-.8648	-1.1978	-1.4846	-1.5101	-1.7571
124	-.5386	-.6981	-.8343	-1.0238	-1.1849	-1.1818	-1.3424
125	-.5526	-.6418	-.7478	-.9082	-1.0868	-1.0928	-1.3133
126	-.4240	-.5240	-.5759	-.7091	-.7546	-.6610	-.7649
127	-.3679	-.4234	-.4879	-.4854	-.5145	-.4997	-.5457
128	-.3075	-.3113	-.3331	-.3038	-.3438	-.3363	-.3570
130	-.1827	-.1744	-.1043	-.1005	-.1619	-.1402	-.1494
151	.2362	.0142	-.3193	-.7757	-1.2726	-1.3756	-1.7513
152	-.1610	-.3744	-.7295	-1.0371	-1.3923	-1.4355	-1.7424
154	-.4134	-.5433	-.7185	-.9513	-1.1200	-1.1351	-1.3406
155	-.4250	-.5269	-.7107	-.8269	-1.0111	-1.0495	-1.3133
156	-.4222	-.4472	-.5350	-.6173	-.7443	-.6278	-.7201
157	-.3281	-.3864	-.4253	-.4874	-.4812	-.4603	-.5529
158	-.2694	-.2901	-.3375	-.2712	-.3306	-.3129	-.3355
160	-.1123	-.1564	-.1183	-.1271	-.1580	-.1584	-.1524
181	.4592	.2144	-.1319	-.5974	-1.1040	-1.2756	-1.6303
182	.0368	-.2251	-.5603	-.8890	-1.2935	-1.3621	-1.6354
184	-.2941	-.4307	-.6333	-.8517	-1.0396	-1.0650	-1.2630
185	-.2927	-.4297	-.5465	-.7522	-.9463	-.9878	-1.2066
186	-.3198	-.3944	-.5133	-.5733	-.7430	-.6245	-.6667
187	-.3157	-.3400	-.3971	-.4432	-.4281	-.4369	-.4787
188	-.2036	-.2522	-.2976	-.2406	-.3034	-.3028	-.3383
190	-.1829	-.1473	-.1247	-.1150	-.1756	-.1609	-.1469
211	.5271	.3571	.0010	-.4144	-.9493	-1.1351	-1.4985
212	.0624	-.0851	-.3875	-.7359	-1.1448	-1.3364	-1.5421
214	-.2262	-.4125	-.5410	-.7497	-.9664	-1.0405	-1.2011
215	-.2500	-.3604	-.4947	-.6970	-.8454	-.9564	-1.1488
216	-.2927	-.3548	-.4262	-.5035	-.6744	-.6672	-.5923
217	-.2822	-.2588	-.3499	-.4026	-.3841	-.4107	-.4088
218	-.2344	-.2103	-.2563	-.2538	-.2683	-.2694	-.3062
220	-.2060	-.1711	-.1306	-.1140	-.1410	-.1498	-.1522
241	.4567	.3744	.0642	-.3008	-.7412	-.9945	-1.2178
242	.0382	-.0380	-.3371	-.6617	-.9851	-1.1421	-1.3171
244	-.2502	-.3439	-.5058	-.6543	-.7934	-.8653	-.9818
245	-.2975	-.3466	-.4859	-.6054	-.7099	-.7896	-.9517
246	.0000	-.3597	-.4053	-.4499	-.5494	-.5701	-.4735
247	-.3340	-.3363	-.3462	-.3690	-.3473	-.3505	-.4056
248	-.2674	-.2837	-.2615	-.2916	-.2188	-.2363	-.2801
250	-.2867	-.1605	-.1525	-.0738	-.1308	-.1410	-.1570

Table 9 : Wing Pressure Coefficient Values
$\alpha = 5$ deg., $\beta = -10$ deg.

Alpha = 5.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
91	-1.7837	-1.9332	-1.9336	-2.0695	-2.4586	-1.4842	-1.1721
92	-1.7858	-1.8845	-1.8401	-1.8767	-2.1546	-1.3624	-1.2209
94	-1.3671	-1.4978	-1.4912	-1.5712	-1.9276	-1.1226	-1.0779
95	-1.3242	-1.4542	-1.4643	-1.5495	-1.3908	-.9810	-1.0255
96	-.7854	-.8181	-.7802	-.7209	-.8342	-.8977	-1.0030
97	-.5688	-.5751	-.5485	-.4754	-.5413	-.8542	-.9714
98	-.3825	-.3640	-.3525	-.2647	-.3216	-.7393	-.8978
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-1.7685	-1.9699	-2.0216	-2.2632	-2.6839	-1.0292	-.9558
122	-1.7571	-1.8910	-1.8831	-1.9877	-2.3045	-1.0296	-.9985
124	-1.3424	-1.5074	-1.5329	-1.7546	-2.1633	-.9563	-.9241
125	-1.3133	-1.4536	-1.5128	-1.4753	-1.1980	-.9084	-.9114
126	-.7649	-.7910	-.7622	-.7598	-.8453	-.8828	-.9171
127	-.5457	-.5820	-.5288	-.4900	-.5544	-.8765	-.9526
128	-.3570	-.3851	-.3350	-.2982	-.3292	-.8642	-.9389
130	-.1494	-.1426	-.1206	-.0660	-.1045	-.6973	-.8345
151	-1.7513	-1.9693	-2.0829	-2.3948	-2.8577	-.7946	-.8324
152	-1.7424	-1.8613	-1.8886	-2.0628	-2.5029	-.8127	-.8261
154	-1.3406	-1.5122	-1.5624	-1.9026	-1.9394	-.7779	-.7902
155	-1.3133	-1.4654	-1.5550	-1.3044	-1.2532	-.7576	-.7834
156	-.7201	-.7663	-.7394	-.7549	-.8325	-.7705	-.7951
157	-.5529	-.5546	-.5015	-.5007	-.5456	-.7896	-.8075
158	-.3355	-.3634	-.3127	-.2884	-.3131	-.7985	-.8489
160	-.1524	-.0933	-.1021	-.0815	-.1182	-.7502	-.8254
181	-1.6303	-1.7124	-1.9819	-2.4350	-2.9938	-.6898	-.7433
182	-1.6354	-1.6332	-1.7885	-2.0752	-2.7173	-.7008	-.7491
184	-1.2630	-1.3045	-1.4961	-1.9772	-1.5311	-.6711	-.7090
185	-1.2066	-1.2930	-1.5061	-1.2667	-1.3041	-.6589	-.7053
186	-.6667	-.6452	-.6925	-.7424	-.8192	-.6751	-.7121
187	-.4787	-.4516	-.4812	-.4795	-.5101	-.6833	-.7382
188	-.3383	-.2764	-.3053	-.2839	-.3179	-.6946	-.7493
190	-.1469	-.1147	-.1163	-.0957	-.1321	-.6819	-.7499
211	-1.4985	-1.6301	-1.8884	-2.3970	-3.1718	-.6535	-.6896
212	-1.5421	-1.5506	-1.6867	-2.0676	-2.9813	-.6429	-.7122
214	-1.2011	-1.2358	-1.4451	-1.8961	-1.5667	-.6206	-.6893
215	-1.1488	-1.2048	-1.4482	-1.1504	-1.3072	-.6111	-.6759
216	-.5923	-.5687	-.6292	-.7311	-.8056	-.6169	-.6840
217	-.4088	-.4050	-.4393	-.4628	-.4981	-.6368	-.6914
218	-.3062	-.2623	-.2810	-.2958	-.3155	-.6537	-.7032
220	-.1522	-.1078	-.1197	-.1189	-.1811	-.6435	-.7077
241	-1.2178	-1.3861	-1.6473	-2.1650	-2.9913	-.6308	-.6699
242	-1.3171	-1.3502	-1.5161	-1.8574	-2.3890	-.6244	-.6712
244	-.9818	-1.0401	-1.2266	-1.6204	-1.4542	-.5986	-.6564
245	-.9517	-1.0069	-1.2173	-.9357	-1.2089	-.5901	-.6570
246	-.4735	-.4888	-.5578	-.6746	-.8328	-.5960	-.6599
247	-.4056	-.3861	-.4276	-.4987	-.6143	-.6094	-.6571
248	-.2801	-.2634	-.3018	-.3559	-.4636	-.6432	-.6657
250	-.1570	-.1474	-.1699	-.1976	-.2913	-.6627	-.6682

Table 9 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg. , $\beta = -10$ deg.

Alpha = 5.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
351	.7521	.6470	.5450	.7011	.5614	.4926	.4568
352	.5179	.3940	.2951	.4463	.3074	.2415	.1718
354	.2427	.1339	.0556	.1920	.0753	.0211	-.0355
355	.1262	.0519	-.0360	.1059	.0014	-.0491	-.0955
356	-.0427	-.1072	-.1634	-.0102	-.0879	-.1147	-.1296
357	-.1639	-.2085	-.2432	-.0516	-.1006	-.1255	-.1327
358	-.1178	-.1363	-.2600	.1478	.5265	.2756	-.0662
360	-.5011	-.4655	-.4213	-.0615	-.0410	-.0345	-.0176
381	.8084	.7089	.6009	.7704	.6155	.5250	.4800
382	.6071	.4806	.3611	.5268	.3609	.2716	.2141
384	.3214	.2156	.1234	.2536	.1412	.0683	.0120
385	.2153	.1183	.0316	.1686	.0703	.0031	-.0475
386	.0255	-.0630	-.1239	.0334	-.0339	-.0810	-.1273
387	-.1325	-.1583	-.2087	-.0348	-.0649	-.0959	-.1185
388	-.2651	-.2873	-.2994	-.0819	-.0769	-.0930	-.1015
390	-.5322	-.4843	-.4552	-.1039	-.0470	-.0297	-.0301
411	.8442	.7471	.6576	.7960	.6422	.5499	.4874
412	.6449	.5334	.4313	.5761	.4053	.3103	.2270
414	.3905	.2794	.1879	.3295	.1771	.1028	.0326
415	.2969	.1811	.1076	.2370	.1094	.0386	-.0164
416	.0692	-.0030	-.0656	.0692	-.0162	-.0589	-.1035
417	-.0749	-.1280	-.1644	.0092	-.0537	-.0837	-.1065
418	-.2332	-.2642	-.2660	-.0537	-.0832	-.0925	-.0947
420	-.5149	-.4938	-.4622	-.1008	-.0591	-.0494	-.0204
441	.8898	.7908	.7283	.8344	.6654	.5657	.4820
442	.7068	.5826	.4977	.6174	.4181	.3140	.2301
444	.4627	.3312	.2512	.3528	.2046	.1148	.0476
445	.3448	.2291	.1510	.2573	.1298	.0492	-.0131
446	.1360	.0451	-.0221	.0999	.0105	-.0508	-.0915
447	-.0322	-.0929	-.1316	.0185	-.0373	-.0770	-.1091
448	-.2040	-.2174	-.2642	-.0354	-.0584	-.0875	-.0927
450	-.5275	-.5146	-.5160	-.1123	-.0664	-.0562	-.0459
471	.8959	.8164	.7522	.8586	.6657	.5522	.4396
472	.7431	.6354	.5298	.6316	.4298	.3173	.2252
474	.5058	.3808	.2876	.3801	.2174	.1252	.0453
475	.3936	.2785	.1949	.2845	.1397	.0496	-.0072
476	.1858	.0770	.0124	.1252	.0188	-.0401	-.0832
477	-.0076	-.0820	-.1091	.0460	-.0308	-.0712	-.1020
478	-.1534	-.2311	-.2181	-.0149	-.0454	-.0830	-.0943
480	-.4991	-.5378	-.4770	-.0824	-.0593	-.0593	-.0428
501	.8612	.7874	.7145	.7995	.5968	.4678	.3434
502	.6904	.5773	.4933	.5623	.3687	.2578	.1372
504	.4687	.3569	.2653	.3321	.1790	.0928	.0150
505	.0000	.2566	.1739	.2349	.1096	.0307	-.0351
506	.1860	.0836	.0174	.1055	.0056	-.0562	-.1083
507	.0305	-.0376	-.0899	.0347	-.0374	-.0821	-.1080
508	-.1001	-.1539	-.1837	-.0060	-.0616	-.0870	-.1109
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 9 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg., $\beta = -10$ deg.

Alpha = 5.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
351	.4568	.3303	.2152	-.0879	-.4366	-.8522	-1.2119
352	.1718	.0847	-.0161	-.2517	-.5086	-.8052	-1.0999
354	-.0355	-.0992	-.1716	-.3496	-.5273	-.7383	-.9011
355	-.0955	-.1569	-.2178	-.3782	-.5394	-.7047	-.8424
356	-.1296	-.1876	-.2296	-.3392	-.4574	-.5645	-.6809
357	-.1327	-.1647	-.1900	-.2688	-.3722	-.4608	-.5033
358	-.0662	-.4431	-.3283	-.3807	-.4437	-.4542	-.5187
360	-.0176	-.0391	-.0609	-.1426	-.1650	-.1056	-.1316
381	.4800	.3454	.1930	-.1613	-.5744	-1.0775	-1.5550
382	.2141	.0907	-.0244	-.3035	-.6218	-.9773	-1.3264
384	.0120	-.0793	-.1614	-.3553	-.5686	-.8145	-1.0348
385	-.0475	-.1292	-.1942	-.3760	-.5636	-.7519	-.9526
386	-.1273	-.1731	-.2207	-.3392	-.4763	-.6181	-.7209
387	-.1185	-.1521	-.1861	-.2625	-.3815	-.4906	-.5281
388	-.1015	-.1172	-.1355	-.2101	-.2988	-.3509	-.4016
390	-.0301	-.0269	-.0568	-.1434	-.1492	-.1450	-.1957
411	.4874	.3240	.1505	-.2743	-.7675	-1.3542	-1.9282
412	.2270	.0985	-.0417	-.3557	-.7256	-1.1624	-1.5933
414	.0326	-.0561	-.1571	-.3819	-.6237	-.9004	-1.1663
415	-.0164	-.1082	-.1958	-.3772	-.5938	-.8292	-.8643
416	-.1035	-.1664	-.2172	-.3469	-.5110	-.6703	-.6707
417	-.1085	-.1531	-.1855	-.2798	-.4056	-.4873	-.4861
418	-.0947	-.1201	-.1366	-.2090	-.3327	-.3544	-.3529
420	-.0204	-.0296	-.0562	-.1512	-.1207	-.1764	-.1689
441	.4820	.3067	.1104	-.3735	-.9430	-1.6114	-1.9978
442	.2301	.0845	-.0647	-.4281	-.8277	-1.2915	-1.8390
444	.0476	-.0581	-.1578	-.4112	-.6723	-1.0123	-.9932
445	-.0131	-.1067	-.1882	-.4122	-.6364	-.8776	-.9421
446	-.0915	-.1548	-.2172	-.3533	-.5271	-.6704	-.7214
447	-.1091	-.1384	-.1839	-.2947	-.4282	-.5119	-.5378
448	-.0927	-.1143	-.1411	-.2193	-.3086	-.3954	-.3764
450	-.0459	-.0402	-.0571	-.1567	-.1497	-.2342	-.2230
471	.4396	.2670	.0496	-.4607	-1.0712	-1.7524	-2.2105
472	.2252	.0634	-.0969	-.4675	-.9016	-1.4705	-2.2437
474	.0453	-.0663	-.1670	-.4161	-.7046	-.9278	-1.1226
475	-.0072	-.1117	-.1957	-.4120	-.6548	-.8436	-.9778
476	-.0832	-.1613	-.2187	-.3683	-.5540	-.6821	-.7402
477	-.1020	-.1535	-.1892	-.2943	-.4261	-.5294	-.5611
478	-.0943	-.1264	-.1392	-.2305	-.3147	-.4010	-.4222
480	-.0428	-.0590	-.0674	-.1557	-.1701	-.2180	-.2694
501	.3434	.1522	-.0637	-.5558	-1.1349	-1.6787	-2.2163
502	.1372	.0076	-.1356	-.4774	-.8551	-1.5642	-2.2752
504	.0150	-.0820	-.1782	-.3970	-.6609	-.7781	-1.0354
505	-.0351	-.1189	-.2033	-.3908	-.6153	-.7666	-.8959
506	-.1083	-.1622	-.2248	-.3580	-.5142	-.6555	-.7738
507	-.1080	-.1553	-.2025	-.2958	-.4146	-.5398	-.6475
508	-.1109	-.1365	-.1686	-.2503	-.3397	-.4380	-.5632
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 9 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 5$ deg. , $\beta = -10$ deg.

Alpha = 50.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
91	-.4818	-.6225	-.6771	-.6619	-.6328	-.6212	-.6013
92	-.4397	-.6276	-.6696	-.6463	-.6332	-.6244	-.6106
94	-.4711	-.6131	-.6665	-.6579	-.6381	-.6311	-.6164
95	-.4852	-.6187	-.6708	-.6696	-.6355	-.6263	-.6070
96	-.4755	-.6141	-.6960	-.6666	-.6295	-.6236	-.6216
97	-.4845	-.6350	-.6945	-.6751	-.6354	-.6304	-.6120
98	-.4643	-.6295	-.6826	-.6701	-.6424	-.6338	-.6293
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-.5422	-.6160	-.6512	-.6339	-.6075	-.5964	-.5917
122	-.5418	-.6147	-.6487	-.6366	-.6160	-.5996	-.5991
124	-.5387	-.6250	-.6682	-.6486	-.6271	-.6071	-.5773
125	-.5153	-.6344	-.6676	-.6374	-.6168	-.6124	-.5856
126	-.5371	-.6352	-.6727	-.6550	-.6216	-.6023	-.5789
127	-.5268	-.6252	-.6624	-.6501	-.6223	-.6133	-.5862
128	-.5099	-.6222	-.6737	-.6469	-.6187	-.6166	-.6166
130	-.5234	-.6087	-.6612	-.6492	-.6443	-.6286	-.6216
151	-.5929	-.6487	-.6477	-.6231	-.5834	-.5741	-.5542
152	-.6072	-.6521	-.6480	-.6224	-.5918	-.5682	-.5558
154	-.5876	-.6449	-.6538	-.6185	-.5914	-.5794	-.5467
155	-.6102	-.6461	-.6605	-.6275	-.5937	-.5852	-.5641
156	-.6053	-.6384	-.6595	-.6234	-.5899	-.5875	-.5455
157	-.5837	-.6461	-.6612	-.6261	-.5900	-.5836	-.5729
158	-.5655	-.6342	-.6458	-.6166	-.5995	-.5896	-.5851
160	-.6087	-.6117	-.6510	-.6342	-.5985	-.5970	-.6064
181	-.6431	-.6886	-.6527	-.5916	-.5620	-.5393	-.5364
182	-.6768	-.6898	-.6557	-.6029	-.5686	-.5546	-.5435
184	-.6418	-.6804	-.6510	-.6049	-.5686	-.5562	-.5326
185	-.6830	-.6669	-.6621	-.6003	-.5641	-.5481	-.5336
186	-.6200	-.6669	-.6511	-.6131	-.5716	-.5479	-.5375
187	-.5988	-.6535	-.6451	-.6083	-.5632	-.5523	-.5447
188	-.6017	-.6684	-.6518	-.6083	-.5725	-.5442	-.5361
190	-.6266	-.6654	-.6520	-.6007	-.5724	-.5664	-.5816
211	-.6894	-.7024	-.6541	-.5890	-.5354	-.5297	-.5096
212	-.6869	-.7061	-.6565	-.5834	-.5445	-.5220	-.5180
214	-.6810	-.6868	-.6455	-.5869	-.5573	-.5230	-.5310
215	-.6736	-.6907	-.6476	-.5814	-.5473	-.5294	-.5193
216	-.6664	-.6699	-.6518	-.5967	-.5455	-.5318	-.5250
217	-.6485	-.6870	-.6493	-.5984	-.5489	-.5351	-.5127
218	-.6319	-.6908	-.6560	-.5993	-.5546	-.5336	-.5251
220	-.6240	-.6793	-.6471	-.5804	-.5564	-.5383	-.5271
241	-.6308	-.6633	-.6343	-.5764	-.5287	-.5004	-.4810
242	-.6474	-.6671	-.6431	-.5772	-.5208	-.5119	-.4934
244	-.6155	-.6470	-.6349	-.5857	-.5277	-.5187	-.4938
245	-.6221	-.6403	-.6474	-.5866	-.5347	-.5142	-.4931
246	-.6244	-.6386	-.6430	-.5873	-.5449	-.5177	-.4982
247	-.6218	-.6500	-.6579	-.5826	-.5396	-.5203	-.5065
248	-.6099	-.6673	-.6441	-.5829	-.5325	-.5271	-.4992
250	-.6393	-.6608	-.6627	-.5788	-.5331	-.5212	-.5125

Table 10 : Wing Pressure Coefficient Values
$\alpha = 50$ deg. , $\beta = -10$ deg.

Alpha = 50.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
91	-.6013	-.6063	-.5977	-.5735	-.5600	-.5450	-.6085
92	-.6106	-.6081	-.5968	-.5726	-.5502	-.5564	-.5970
94	-.6164	-.6090	-.5929	-.5685	-.5604	-.5576	-.6229
95	-.6070	-.6096	-.5949	-.5676	-.5739	-.5694	-.6127
96	-.6216	-.6031	-.5990	-.5754	-.6010	-.5954	-.6113
97	-.6120	-.6140	-.6141	-.6168	-.5934	-.5927	-.6309
98	-.6293	-.6285	-.6186	-.6204	-.6077	-.5827	-.6585
100	.0000	.0000	.0000	.0000	.0000	.0000	.0000
121	-.5917	-.5878	-.5569	-.5479	-.5398	-.5118	-.5740
122	-.5991	-.5795	-.5711	-.5350	-.5214	-.5279	-.5790
124	-.5773	-.5804	-.5687	-.5433	-.5326	-.5568	-.5995
125	-.5856	-.5859	-.5683	-.5458	-.5470	-.5494	-.6061
126	-.5789	-.5875	-.5678	-.5476	-.5846	-.5906	-.6220
127	-.5862	-.5950	-.5889	-.5720	-.5930	-.5927	-.6081
128	-.6166	-.6042	-.6063	-.5952	-.6004	-.5770	-.6300
130	-.6216	-.6146	-.6060	-.5907	-.5823	-.5858	-.6515
151	-.5542	-.5383	-.5306	-.4997	-.4992	-.5017	-.5371
152	-.5558	-.5499	-.5374	-.4957	-.4878	-.4995	-.5368
154	-.5467	-.5464	-.5316	-.5061	-.5148	-.5385	-.5759
155	-.5641	-.5596	-.5497	-.5078	-.5257	-.5458	-.5803
156	-.5455	-.5608	-.5453	-.5297	-.5586	-.5860	-.6126
157	-.5729	-.5663	-.5628	-.5470	-.5753	-.5909	-.6023
158	-.5851	-.5856	-.5715	-.5622	-.5835	-.5898	-.6089
160	-.6064	-.5970	-.5923	-.5841	-.5729	-.5729	-.6270
181	-.5364	-.5245	-.5086	-.4817	-.4763	-.4727	-.5036
182	-.5435	-.5212	-.5091	-.4808	-.4727	-.4724	-.5087
184	-.5326	-.5209	-.5112	-.4798	-.4724	-.4967	-.5645
185	-.5336	-.5204	-.5191	-.4735	-.4889	-.5066	-.5749
186	-.5375	-.5240	-.5134	-.4809	-.5192	-.5643	-.5982
187	-.5447	-.5267	-.5229	-.4893	-.5427	-.5856	-.5920
188	-.5361	-.5402	-.5369	-.5337	-.5845	-.5729	-.5824
190	-.5816	-.5590	-.5616	-.5446	-.5768	-.5640	-.5911
211	-.5096	-.5004	-.4871	-.4459	-.4457	-.4386	-.4983
212	-.5180	-.5041	-.4889	-.4501	-.4346	-.4395	-.4906
214	-.5310	-.5072	-.4905	-.4565	-.4429	-.4679	-.5240
215	-.5193	-.5065	-.4921	-.4562	-.4543	-.4891	-.5425
216	-.5250	-.5099	-.5032	-.4527	-.4724	-.5185	-.5576
217	-.5127	-.5106	-.4985	-.4707	-.5002	-.5570	-.5911
218	-.5251	-.5188	-.4985	-.4811	-.5189	-.5553	-.5737
220	-.5271	-.5281	-.5157	-.5074	-.5139	-.5477	-.5842
241	-.4810	-.4802	-.4674	-.4343	-.4123	-.4263	-.4715
242	-.4934	-.4815	-.4764	-.4432	-.4093	-.4469	-.4971
244	-.4938	-.4852	-.4729	-.4310	-.4218	-.4397	-.5112
245	-.4931	-.4892	-.4798	-.4423	-.4195	-.4512	-.5167
246	-.4982	-.4922	-.4787	-.4402	-.4358	-.4963	-.5338
247	-.5065	-.4960	-.4881	-.4486	-.4440	-.5068	-.5605
248	-.4992	-.4894	-.4793	-.4604	-.4582	-.5244	-.5649
250	-.5125	-.4965	-.4906	-.4583	-.4808	-.5116	-.5560

Table 10 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg., $\beta = -10$ deg.

Alpha = 50.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	-.5000	-.4000	-.3000	-.2000	-.1000	-.0500	.0000
351	.7256	.7766	.7842	.8001	.8247	.8406	.8128
352	1.1690	1.1310	1.0943	1.0862	1.0693	1.0684	.9909
354	1.2860	1.2710	1.1727	1.1339	1.0890	1.0735	.9776
355	1.3183	1.2555	1.1664	1.1082	1.0580	1.0370	.9170
356	1.2331	1.1395	1.0293	.9464	.8814	.8494	.7344
357	1.0742	.9770	.8523	.7703	.6944	.6579	.5732
358	1.1348	.9059	.7947	.5070	.6277	.3381	.9845
360	.3393	.2758	.2070	.1113	.0340	.0023	-.0433
381	.6504	.6979	.7331	.7471	.7845	.8159	.7633
382	1.0901	1.0816	1.0709	1.0522	1.0729	1.0601	.9716
384	1.2948	1.2355	1.1814	1.1266	1.0950	1.0723	.9667
385	1.3198	1.2488	1.1732	1.0950	1.0718	1.0348	.9171
386	1.2575	1.1444	1.0451	.9562	.9002	.8602	.7493
387	1.0941	1.0097	.8891	.7954	.7299	.6720	.5614
388	.9128	.7735	.6836	.5678	.5058	.4392	.3559
390	.3412	.2880	.2008	.0788	.0141	-.0497	-.0979
411	.5915	.6453	.6886	.7318	.7837	.8064	.7623
412	1.0445	1.0425	1.0473	1.0408	1.0460	1.0490	.9581
414	1.2871	1.2094	1.1799	1.1337	1.0860	1.0699	.9173
415	1.3291	1.2258	1.1424	1.1001	1.0685	1.0221	.8991
416	1.2934	1.1754	1.0436	.9742	.9179	.8546	.7347
417	1.1426	1.0333	.9315	.8093	.7294	.6686	.5564
418	.9250	.8310	.7047	.6042	.4948	.4379	.3459
420	.3804	.3281	.2188	.0852	-.0006	-.0620	-.1102
441	.5089	.5854	.6395	.6856	.7573	.7921	.7393
442	.9829	1.0124	1.0132	1.0233	1.0177	1.0279	.9490
444	1.2581	1.2035	1.1322	1.1143	1.0594	1.0482	.9287
445	1.2877	1.2395	1.1407	1.1017	1.0331	1.0069	.8901
446	1.2915	1.1680	1.0557	.9673	.8843	.8490	.7316
447	1.1766	1.0468	.8978	.7966	.7154	.6594	.5618
448	.9896	.8629	.7434	.6072	.5090	.4485	.3509
450	.4519	.3587	.2241	.0771	-.0292	-.0725	-.1280
471	.4733	.5580	.6200	.6772	.7580	.7957	.7578
472	.9453	.9622	.9717	1.0043	1.0294	1.0142	.9225
474	1.2255	1.1663	1.1255	1.0727	1.0580	1.0200	.9078
475	1.2532	1.2035	1.1169	1.0644	1.0199	.9697	.8608
476	1.2650	1.1629	1.0459	.9489	.8794	.8221	.7043
477	1.1793	1.0306	.9287	.8095	.7038	.6527	.5357
478	.9993	.8719	.7454	.6257	.5063	.4477	.3408
480	.4909	.3820	.2640	.1171	.0034	-.0569	-.1099
501	.4602	.5484	.6457	.6861	.7941	.8178	.7497
502	.9223	.9294	.9232	.9359	.9640	.9667	.8550
504	1.0901	1.0378	1.0132	.9545	.9320	.9037	.7716
505	1.1147	1.0588	.9911	.9249	.8681	.8556	.7189
506	1.0780	1.0023	.9296	.8160	.7523	.7037	.5800
507	1.0136	.9385	.8231	.7317	.6317	.5634	.4604
508	.9494	.8286	.7397	.5829	.4927	.4301	.3249
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 10 : Wing Pressure Coefficient Values (Cont.)
α = 50 deg. , β = -10 deg.

Alpha = 50.0000 Beta = -10.0000

Port	Non-Dimensional Spin Rates						
	.0000	.0500	.1000	.2000	.3000	.4000	.5000
351	.8128	.7839	.8817	.9671	1.0417	1.1229	1.2206
352	.9909	.9675	1.0609	1.1040	1.1605	1.2029	1.2460
354	.9776	.9380	1.0232	1.0278	1.0338	1.0551	1.0909
355	.9170	.8854	.9635	.9539	.9548	.9454	.9667
356	.7344	.7016	.7581	.7272	.7133	.6948	.7082
357	.5732	.5228	.5658	.5153	.5131	.4718	.4724
358	.9845	-1.2652	.2287	.3117	.2957	.4112	.3523
360	-.0433	-.0732	-.1087	-.1600	-.1860	-.2142	-.2370
381	.7633	.8642	.8822	.9720	1.0598	1.1605	1.2523
382	.9716	1.0682	1.0586	1.1180	1.1527	1.1700	1.2423
384	.9667	1.0268	1.0150	1.0184	1.0101	1.0389	1.0146
385	.9171	.9753	.9558	.9426	.9234	.9188	.8935
386	.7493	.7906	.7499	.7265	.6669	.6645	.6211
387	.5614	.5866	.5508	.5026	.4675	.4450	.3847
388	.3559	.3536	.3121	.2646	.2200	.1868	.1417
390	-.0979	-.1261	-.1685	-.2272	-.2739	-.3084	-.3541
411	.7623	.8630	.8879	.9775	1.0792	1.1732	1.2570
412	.9581	1.0450	1.0625	1.0879	1.1310	1.1621	1.1951
414	.9173	1.0185	1.0051	.9953	.9779	.9593	.9500
415	.8991	.9604	.9351	.9192	.8803	.8639	.8302
416	.7347	.7711	.7381	.6850	.6546	.5981	.5438
417	.5564	.5793	.5302	.4787	.4325	.3712	.3261
418	.3459	.3466	.2997	.2300	.1859	.1188	.0663
420	-.1102	-.1473	-.1897	-.2540	-.2920	-.3624	-.4177
441	.7393	.8585	.8942	.9977	1.0946	1.1634	1.2462
442	.9490	1.0413	1.0474	1.0806	1.1022	1.1260	1.1125
444	.9287	1.0046	.9841	.9609	.9321	.8927	.8639
445	.8901	.9370	.9129	.8815	.8345	.7862	.7321
446	.7316	.7587	.7177	.6637	.5931	.5208	.4456
447	.5618	.5711	.5169	.4515	.3794	.3045	.2461
448	.3509	.3463	.2912	.2166	.1440	.0793	-.0058
450	-.1280	-.1686	-.2186	-.2902	-.3531	-.4169	-.4994
471	.7578	.8839	.9223	1.0197	1.0947	1.1701	1.1974
472	.9225	1.0396	1.0365	1.0565	1.0716	1.0735	1.0632
474	.9078	.9763	.9509	.9209	.8781	.8178	.7561
475	.8608	.9186	.8807	.8234	.7738	.7096	.6150
476	.7043	.7396	.6896	.6183	.5360	.4506	.3768
477	.5357	.5521	.4942	.4175	.3274	.2435	.1553
478	.3408	.3467	.2836	.1984	.1225	.0271	-.0579
480	-.1099	-.1466	-.1990	-.2794	-.3528	-.4207	-.5079
501	.7497	.9048	.9290	1.0082	1.0564	1.1041	1.0830
502	.8550	.9543	.9535	.9531	.9386	.8937	.8420
504	.7716	.8422	.8195	.7643	.7139	.6484	.5531
505	.7189	.7662	.7401	.6552	.6115	.5367	.4422
506	.5800	.6083	.5637	.4684	.4125	.3227	.2020
507	.4604	.4653	.4193	.3247	.2489	.1556	.0649
508	.3249	.3227	.2707	.1624	.0916	.0127	-.1048
510	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Table 10 : Wing Pressure Coefficient Values (Cont.)
$\alpha = 50$ deg. , $\beta = -10$ deg.

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